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President's Address

ON

THE MEDICAL PROFESSION: A HORIZON OF HOPE.

BY

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In addressing this great Association for the first time as its President, my first duty is to thank you for the great honour you have conferred upon me—an honour which, I am well aware, I owe in the first instance to my friends and colleagues of Newcastle and neighbouring counties. In the next place, it is my great privilege to bid you, on behalf of my Lord Mayor, corporation, and citizens of our city, a most cordial welcome—a welcome which it will be the pleasure and privilege of your professional brethren to make as genuine and as warm as possible during the whole of your visit.

This is the third occasion on which the Association has held its annual meeting in Newcastle, and twenty-eight years have gone by since your last visit. The interval with its tale of years has been marked by changes in our city, and especially in the personnel of our profession, for the young have grown old, and some of those of middle life, and all who were then in advanced age, "have one by one passed silently to rest."

The name of one calls for special reference, for, as we all recognize, much of the success of the Meeting of 1893 was due to the hospitality and courtesy of George Hare Philipson, the President of the Association, and not a little to his business acumen. I venture to hope that the present meeting will be as successful as the last and be enjoyed by you, our welcome visitors. At all events, it is our most earnest desire that it will be both agreeable and profitable; the latter I feel sure it will be from what I know of the scientific and professional programme, and if the surroundings of our meeting place are less attractive and beautiful than those of some other towns visited by the Association, we hope to balance that by the warmth of our personal welcome.

In choosing a subject for an address worthy of the occasion and my audience, I ask myself, Would the past, present, or future best provide me with what I want? and, seeing that we best prophesy of the future from the past, perhaps my own forty busy years of consulting practice, with intimate association all that time with students as a teacher of medicine, should entitle me to dream of the future in the light of the past, which brings me to a question that we must all ask ourselves in the fullness of time, Are we satisfied with things as they are, and, if not, in what manner can they be improved? In short, I am at once brought up against considerations of the widest nature regarding our profession as a whole in its present standing and what it might become.

Let us ask, in the first place, are we satisfied with the position our profession occupies in the scheme of national polity? And next, are we satisfied with ourselves? With regard to the status of the profession as a whole, we are told by a recent writer, Branford, in his book, *A New Chapter in the Science of Government*, "that the whole medical profession of the country in all its various groups of professional associations or subguilds (private, municipal, State) is now in process of organizing itself into a vast unified guild of a medico-political kind, which later will embrace the entire world, and why? Because it has become convinced that the whole hygiene of the folk requires its utmost and careful consideration in all its aspects, it is determined to be adequately represented in the government of the country." And, again, the same author writes, "it is illuminating to note that the first great social group to attempt its national organization thus as a whole (Labour has done it only in part) is the most highly organized of the biological group of occupations." This fairly represents our position to-day, and yet we cannot fail to recognize that we are still in a somewhat fluid state. It is evident at least that we are becoming an indispensable factor in the government of the country. But this has not always been the case, for our importance and indispensableness have risen with our efficiency. Contrast the influence exerted by the work of the doctor upon the result of the South African war with that of the late great war and the point will be conceded at once. But in what sense are we indispensable? All-important as a factor of party government? A power to conjure with? To be exploited by either party—as free, or fair, trade, or the Irish problem? Or else do we stand alone like the religion of a nation? Like the influence of the throne? A power that is essential to the well-being of the people, to be encouraged and fostered as one of our great national assets? Aye, indispensable in the highest sense, and all the more so because of our ever-growing efficiency. It is a soul-stirring thought and cannot fail to stimulate us to greater efforts which must succeed when all are united for a common purpose.

Consider for a moment the advance of one generation, contrasting the position of medicine fifty years ago with the advance of to-day. In some directions the progress has been phenomenal, in others very substantial, in others again, less so; but a gain all along the line; an advance that is quite as marked in the socio-politico-medical world as it is in the strictly scientific, and all purely professional and aiming at improvement of the health and welfare of the people, with proficiency as our goal, ever mindful of the fact that the standard of our efficiency is the measure of the value of our services to the State. And yet, if we read history correctly, it would seem that in the past the State valued medicine in the inverse ratio of the value of our services to the nation. But this can no longer be said to be true. From time immemorial, when pristine medicine and religious beliefs could not be considered apart, from the time when primitive man was unable to connect cause and effect, the echo with the sound, the reflection with the mirror-like surface of still water, to the present, medicine has been accepted at its face value, and whilst we would not disturb confidence in the doctor, it is our aim more whole-heartedly than at any other time in the past to deserve that confidence—to bring our true value into closer harmony with our face value—and it is only fair to ourselves to recognize that the public are more discriminating than they were, and neither they nor we are quite so prone to confuse the *post* with the *propter* as in days gone by. Formerly the outlook of the bystander was not what he thought but what he felt, but now ever-increasingly the people have acquired the at times inconvenient habit of thinking, a change that we welcome, for we look to the public for assistance in our efforts to advance. We are a scientific and progressive profession, and are not "content to dwell in decencies for ever." Progressive, yes, but the question is, Can we do more than we are doing and thus progress more rapidly? Can we render still greater services, and thus deserve and earn still more the goodwill and appreciation of our fellows? If so, we shall have no cause to complain of our position in the State, for we shall recognize our true value, and as is the custom, others will esteem us as we esteem ourselves.

Progress with us consists in increase in knowledge and its wider diffusion, together with greater accuracy in its application in preventing and combating disease; or, in other words, what we want is more light and more efficient torch-bearers. The late great war demonstrated very clearly that the personnel of the medical profession varied enormously, as was only to be expected, in professional knowledge and character, and that therefore there was a great lack of uniformity in the value of individual services rendered to the country. On the whole, it may be said to the credit of the profession of medicine and surgery that these services were splendid; nevertheless they were not uniform, for whilst many covered themselves with glory, there were some who failed; nor need one lay oneself open to the charge of a breach of allegiance if I remind the Association that the same want of uniformity obtains throughout the length and breadth of the land; and of necessity there must be great difference in the skill and ability of both men and women forming the ranks of our calling. The personal factor varies enormously, and we cannot shut our eyes to the inequalities, though we can do much towards diminishing the disturbances arising from them. Making due allowance for the differences in the personal qualifications, inclusive of natural ability, the lack of uniformity depends in some measure upon the want of uniformity in educational opportunities—but to this point I shall return; suffice it for the present that there are inequalities, and that the service to the public is defective in consequence. We must not, however, lose sight of the fact that character is the most important human factor in the levelling-up process, for, as everyone of experience recognizes, character is of more importance than ability. "What," asked Le Play, the great French sociologist, many years ago of an audience, "is the most important thing that comes out of the mine?" a riddle to which the average auditor replied, "Coal." "No," said Le Play, "Not coal, but the miner." And so it is with us; a doctor is of more importance than his physic, and it should be our duty to educate, train, and equip him so that he will fulfil his proper functions towards his patients and the State.

We cannot make character, but we can shape it, and the first step surely is to imbue the novitiate with a proper sense of responsibility. This, our responsibility, imposed upon every member of our profession, is a serious, a tremendously serious matter, and it is growing with the evolution of our calling. The man of character recognizes it, meets it, and does his utmost to face it, but I am afraid I am within the mark when I venture to say that there are a great many who do not sufficiently realize it, and look upon their profession as a means to an end—to wit, a living. As matters are shaping, the State will soon realize fully the great weight of responsibility that belongs to every medical man, and I am anxious that it should not be left to the State to bring it home to us; and assuredly if we only realize our personal obligation we shall have no difficulty in facing any measure of official responsibility the State may think fit to place upon us. And so let us, conscious of the advantages of a discerning criticism, acknowledge freely that progress might be hastened and indulge in a dream of constructive idealism.

It is scarcely possible to discuss in a comprehensive way the problem of the education and training of a doctor without considering that all-important question, the personal factor—the characteristics fitting the individual for the profession of medicine; all are not suitable, many are manifestly unsuitable; the good doctor is born, the indifferent doctor is made. I pass by, but with due respect for its utility, that personal charm which asserts itself favourably in all human relationships, and would probe deeper in search for the qualities that ensure success in the highest sense. Nor do I despise the factors of self-aggrandizement and desire for gain, for even these selfish desires, if I may so designate them, are legitimate, and often play an important part in the evolution of our science; but behind them we may recognize the interpenetration of more worthy aspirations tending towards higher conceptions of the public weal, and making for the successful struggling of the ever-upward movement. For to frame ideals (as has been well said) is of the essence of man's nature. We all recognize that we cannot ignore the business side of medicine—would that we could, and live for the interest it is to us and for the service we can render our fellows. But although this, as a practical proposition, is hopeless, the sentiment touches very close the traits or characteristics that distinguish the good from the indifferent doctor. One naturally hesitates to set oneself up as a critic, and it may even be said that he who criticizes his fellows is disloyal to his cloth, and I hope that this objection will be disallowed when I candidly admit and deplore my own shortcomings, and when I venture to claim the right, in the interests of all, to utilize the results of over forty busy years of professional experience.

In our profession, perhaps more than in any other, if a member is to do his duty by the community and State, justice and credit to himself, and, in a word, fulfil his professional obligations in a proper and satisfactory manner, he must continue his education during the whole of his professional career. He must remain a student, for unless this be so, he will not profit by his daily professional experience, and in the passage of time he will lose more than he gains. Experience, as all will admit, notwithstanding present-day ideas, is most valuable, but only if it includes sound knowledge in its content, for otherwise it may be worse than useless, and like little knowledge a dangerous thing. For experience is only of value when it is associated with accurate thinking, and thus professional experience and studious habits are inseparable.

The doctor's life abounds in matters of the deepest interest, and if his heart is in his work, and his grasp of fundamentals sufficient, a foundation upon which a superstructure may be raised, he cannot fail to develop the habit of study, for the working of the studious mind brought into daily contact with the problems of Medicine and Surgery is smooth and progressive; but everything turns upon the one essential point—is he interested? Yes! The secret of individual progress lies in the answer to the question—Is he interested? And the man or woman who is, in the true scientific sense, must inevitably advance, though naturally much must depend upon opportunity. The objection will no doubt be raised, "What time in running a busy practice have I for study?" and doubtless our sympathies will be with our objector, who represents a multitude of practitioners without leisure. But even the busiest drudge in our profession, if only he be interested, must advance; and if it so happen that he is one of the elect, nothing can keep him back so long as he is able to work. But the rate of progress and the height of his achievement will depend upon opportunity, for next to enthusiasm opportunity tells most heavily in the race, and without it all competitors are of necessity badly handicapped; but earnestness begotten of enthusiasm is easily the first essential, for the man who possesses it will make his own opportunity. Nevertheless, the profession of medicine is an open field, and the entry will always include some who, lacking zeal, even with the advantage of opportunity, inevitably fall behind. In the interests, therefore, of all it is in the highest degree important to facilitate the acquisition of knowledge, and thus to bring within the reach of all the ascertainable facts out of which professional experience is fashioned. These facts are either to be found in literature, and as such are at our command, or exist as observations that come under our personal notice, and naturally the earnest student welcomes his information from all sources; but, as I have said, he makes his own opportunity, and can safely be trusted to acquire what he is searching for, whilst by increasing the facilities to the average man and rendering it more easy for him to acquire information we are opening wide the avenue of knowledge for all.

How best, then, can we help forward post-graduate training and assist the doctor to add to his store of information, and thus increase his individual usefulness? It may perhaps enable us the better to answer this question and to understand the necessity for some change if I remind the public of the conditions—with which the majority of my hearers are already familiar—under which the average doctor enters upon the practice of his profession and endeavours to do his duty to his patients, and to add to his professional knowledge. During the greater part of a long professional life I have taken part in examinations for medical degrees, and have been able to test, more or less accurately, the capabilities and acquirements of upwards of two thousand candidates, so can claim to be somewhat familiar with the kind and extent of the professional knowledge with which the minds of those about to embark upon medical practice

are stocked. Two things have impressed me: first, the severity of the ordeal, or examination test, to which the candidate is subjected—that is, the extensive range and large amount of knowledge expected of him; and, second, the inadequacy of his attainments, having regard to the serious and responsible duties awaiting him. Further, it will be known to most present that the University of Durham admits to the degree of M.D., after a searching examination, practitioners of medicine of fifteen years' experience, and who have attained to 40 years of age, and my experience of this examination has taught me the utter hopelessness of any candidate's chances of success who has not devoted many months (six to twelve) to careful preparation for the examination. That is to say, the man who, in popular language, "has a shot at it," always fails, and it must be recollected that the examination is thoroughly practical; and I would like to add that candidates who have presented themselves without careful preparation and have been rejected, and have returned in six or twelve months' time spent in a manner calculated to render themselves fit for the test—including, often, attendance on hospital clinics—have, generally speaking, impressed the examiners most favourably; indeed, the difference in many cases has been most striking between the first and second experience. I would like to add that those who have had the courage and enterprise to undergo this further ordeal, with the necessary thought and preparation, have, I believe, one and all recognized the signal benefit they have obtained by it.

In thus suggesting that there is room for improvement in our service, we must remember we are dealing with knowledge in the practice of medicine and surgery, which it is the aim of all workers, in the interests of all, to raise to the highest possible level of exactness. This is a design to which every practitioner could under favourable circumstances contribute, though at present he is heavily handicapped, as he has to live and work in the most depressing atmosphere of constant doubt—of problems unanswered, of opportunities lost. This wail, for it is a wail, will probably suggest to the minds of all here one of the chief difficulties in the way of progress, and will, I hope, elicit a sympathetic interest in the problem—How are these difficulties to be overcome? It may perhaps be a surprise to many, but not, I suspect, to the more thoughtful section of the public, that the diagnosis in many cases (very many, I am afraid) is only a matter of opinion, which must remain in doubt unless cleared up by an autopsy, and in making this statement it will not, I trust, be thought that I am casting blame upon the doctor; far from it, for the marvel is that his opinion is so often correct, considering the difficulties with which his path is beset in his endeavour to contribute his quota to the common cause. I have alluded to this state of matters as an atmosphere of doubt; it is more than that, it is in the highest degree discouraging and is calculated to kill the scientific spirit with which it is our aim at college to inspire all our students; and in claiming the right of the doctor to follow up the lines of his training, I am urging a change in the interests of all; in the interests of scientific medicine and surgery, and more particularly in the interests of his patients.

I found myself recently discussing the present status of the medical practitioner with a prominent member of our profession, a man of high standing and wide experience as a general practitioner, and the conversation inclined towards the question of education and training of the doctor, and I asked him what in his opinion could be done to improve his scientific and professional standing. His reply was definite and uncompromising. "The one thing above all others," he said, "calculated to elevate and generally to improve the standing of the general practitioner is opportunity for *post-mortem* verification or the contrary of his expressed opinion." He added, "We shall never be any better until we are entitled to claim, with the knowledge that we shall not be denied, a *post-mortem* examination." I was much impressed by this view of the matter, coming as it did from one whose knowledge and experience of general practice could not fail to make clear to him the revolutionary character of the suggestion, and how inconvenient it might be to have to acknowledge our mistakes, for, indeed, the opinion my friend expressed coincided fully with my own. Revolutionary it certainly would be; but what an enormous gain to have our doubts set at rest; and it is not too much to hope that before very long both the public and the profession will be educated up to feel that truth above all things must prevail. Could we but engender amongst our members the love of truth as the fundamental essence of our professional life and the mainspring of our activities, and could we also inspire eagerness to search after and courage to proclaim it, what a noble profession would be ours! I believe the desire to rise and live up to our loftiest professional aims is there; but we are unfortunately trammelled and moulded by public opinion and prejudice and the requirements imposed upon us by the State. The very loftiness of the estimate which is entertained of the doctor is his undoing, for he is set tasks which he cannot perform; he is expected to make bricks without straw, and not infrequently we assume to ourselves personally the public estimation of our calling, though this I believe in the main to be a failing of youth.

In urging the importance, nay more, the necessity for greater facilities for *post-mortem* investigation in clearing up doubts which must arise in the mind of the doctor in many cases, I am indicating the most important step towards a rational scheme of post-graduate training. It is, perhaps, unnecessary to insist upon the enormous advantage it would be were *post-mortem* examinations universal, for all, save those who never make them, are prepared to admit their educational value, and I have little doubt that the opposition to a movement in this direction, begotten of prejudice in the public mind, would soon vanish were the incalculable service to the science of medicine made sufficiently clear. I have said that medicine has advanced in every direction, but I regret to have to admit that the advance along certain diagnostic paths is not as rapid as we could wish, and not nearly so rapid as it would be were *post-mortem* examinations more frequent; and I believe I am stating what is correct when I say that in private practice they are not even so frequent as they were in my earlier days. It is true that in a few of our large hospitals throughout the country, in the wards of which students of medicine enjoy the inestimable privilege of clinical study, the enlightened committee of management now sanctions an autopsy in every case under fitting limitations, but in the majority of our clinical hospitals the old restrictions still obtain and the study of pathology is still hampered as of old, to the great disadvantage of the medical school and, if they but knew, to the public themselves.

Did anyone question the service rendered diagnosis by the substitution of the unclouded prospect of certainty for the befogged atmosphere of uncertainty—the educational value of exact diagnosis in a doubtful case—let him ask himself what he has learnt from the modern surgeon's exploratory operations, and he will candidly admit that nearly all he knows of abdominal diagnosis is the outcome of the lessons he has learnt in consequence of the ease and impunity with which we can now "open and see." It is the examination *ante* which, as we know, is often effectual in averting the *post*.

We all recognize the value of post-graduate teaching in connexion with the Fellowship of Medicine and Post-Graduate Association, and similar courses of study instituted in various centres, and no doubt many take advantage of these opportunities, but after all they are only supplementary to the curriculum of the student and cannot take the place of the natural progress and ever-ripening experience, the outcome of facilities which I would like every practitioner to be able to claim as a right, and for which I have little doubt sooner or later the State will make provision in the interests of medical science and the health of the nation.

The importance of accuracy in diagnosis cannot be overstated, and it is unnecessary to insist upon the value of the autopsy in promoting it as well as in the training of the practitioner. As a scientific profession we naturally aim at precision, but unfortunately take no steps to secure it in our daily work. Of what value, has any one ever asked himself, are the statistics upon which the computing officials of our insurance companies are accustomed to base certain actuarial statements which are accepted as guides to practice because they are founded upon statistics compiled from official returns, which we have reason to believe are so hopelessly inaccurate that the results can at best be nothing more than rule of thumb guides? Some may possibly doubt this statement. Well, let any one that does institute an inquiry—say into the accuracy o

the death certificates as tested by *post-mortem* examinations in even the best of our clinical hospitals—and he will have his eyes opened, and his knowledge of practice may possibly lead him to draw a still more striking inference from the contemplation of the question of the accuracy of the returns throughout the country generally—outside the walls of our great hospitals.

Accuracy in diagnosis is, as I have said, of the first importance, but the search after truth in nearly every other direction as well is lax and indeterminate. Time will not permit me to pursue this most important subject, but I am convinced that until there is instituted in every large teaching hospital connected with our medical schools a statistical department with a highly trained official at its head—call him registrar, or what you will—whose duty it would be to collect and systematize all returns having accuracy as the constant aim, we shall continue to flounder on as we have been doing, groping after truth, and failing to read correctly the signs ready to hand and awaiting interpretation.

At present the returns are grossly inaccurate, and therefore many of the deductions are necessarily fallacious, whilst, for the want of a proper system, the waste of what I may call raw material is simply appalling. Observations of interest are made daily in the wards, *post-mortem* rooms, and the adjacent pathological and chemical laboratories of every teaching hospital, of which use is never made, perhaps because they are isolated and their significance is not at the moment recognized. They are forgotten and, in many instances, pass even from the mind of the physician, surgeon, or pathologist who made them. Professor Vincent tells us of a physicist who, long before the discovery of *x* rays by Röntgen, noticed cloudy markings upon his photographic plates whenever they were brought near to Crookes's tubes, but disregarded the observation as of no value. But instances could be indefinitely multiplied illustrative of the loss to science that may be involved in the failure to note, collect, collate, and investigate simple observations in medicine, surgery, pathology, and collateral sciences. This loss, which cannot be estimated, may very properly be compared with the loss to commerce and science involved in the crude uses to which tar was put before the discovery by Perkin of the colour mauve in the year 1856. Then followed other colours, together with benzine and its homologues toluene, xylene, naphthalene, and anthracene, not to mention the manifold uses to which the long series of coal-tar derivatives have been put. So without any great stretch of imagination may we regard the waste of which I have spoken. The fact is, the work in every hospital ward, *post-mortem* room, and scientific laboratory engaged in the investigation of disease for the purposes of teaching should be regarded in the light of research, and I think the assumption is only reasonable that the establishment of whole-time professorships in medicine, surgery, and midwifery in connexion with all our medical schools, together with properly organized registration departments, would help very greatly to promote this most important side of the teacher's functions. The importance of collecting this raw material, at present running to waste, will be recognized by all, but especially by teachers themselves, who would have the results of their own labours, of their hospital's records and statistics by which to drive home the lessons they would inculcate, for, as Professor Vincent very properly points out, students pay more attention to the personal observations of their teachers than to text-book statements. And further, research workers would be in possession of vast quantities of accurately noted and properly collated facts for the pursuance of their investigations. Thus our teaching facilities would be promoted and our methods of instruction put upon a more satisfactory basis, whilst our knowledge would increase more rapidly and our science correspondingly benefit, and, transcending all, truth would be recognized as the presiding genius of our activities—our great purpose, our highest aspiration.

The history of the general practitioner, the corner stone of the profession of medicine, told in terms of his professional education, is, or should be, a record of continuous progress from the first stage of the introduction to the end of the last chapter, when *finis* marks his retirement or his decease. He travels along a road, at times rough and uphill, in which there is no break, and perhaps the easiest going, from the education point of view, is the outset carefully indicated by notices bearing the official imprint of the curriculum. It is greatly to his advantage if, at the end of this part of his journey, he can secure a resident appointment in a first-class hospital. This cannot be too strongly emphasized, and it is impossible to over-estimate the value of six months' intensive training at this period of professional life, when responsibility and a certain measure of authority under discipline, with ample opportunity for the study of special problems, unite to shape and develop character, and furnish illustrations in abundance of the principles already forming the foundation of that superstructure of experience, the endowment of the trusted practitioner. So helpful is this experience that the young graduate who has enjoyed it begins life with a take-off vastly superior to his neighbour who has not—who is, indeed, in comparison badly handicapped in the race of life. I feel so strongly upon this point—the advantage of a resident appointment—that I would like to take this opportunity to warn the rising generation against the practice, which is becoming only too common, of declining these appointments in order that an immediate financial return may be secured. It is true there are not at present hospital appointments for all, but sooner or later, with perhaps some adjustment of the period to be served, this want will be remedied, and I venture to hope that the time will come when a resident appointment will be found to be an essential feature of the training of the doctor. Having regard to its educational value, the period of the student's career at which the appointment is held is, I believe, a matter of great importance. During the war, when every available practitioner was called upon to serve, our hospitals had to fall back upon students to fill the posts usually held by qualified doctors, and it was the common experience that in the case of many students who were appointed before they had reached a certain stage in their professional training to fill these gaps the appointment and all that it entailed was not only valueless but actually harmful. But coming in due course at the end of the curriculum, and after the final examination, the experience is most useful, and cannot fail to produce a lasting impression upon the future career.

Whilst urging thus strongly the importance of post-graduate training I must not overlook the claims of the student, to whose work, training, and examinations I may be permitted to make brief reference. I have already hinted that of the many who elect to study medicine there are some who are quite unsuitable, and who would be well advised to try some other walk in life. This I admit raises a very difficult question, and it is one to which hitherto no attention has been given, nor can it very well be discussed in a public address. I pass it by, therefore, with the observation that it is a question that deserves our attention, and I would particularly commend to the authorities the question of preliminary general education of the doctor.

Success in the profession of medicine, by which I mean the proper fulfilment of the duties of the practitioner, is attained by the exercise of certain faculties which are capable of development. Among these gifts stands out prominently the faculty of taking notice. This gift—the power to observe—is in many people, until developed by special training, entirely in suspension, but there is no endowment of which the complex mental organization of man is composed more capable of development than this. A party of grouse shooters, when tramping through the heather between the rows of butts, made a search for white heather, and the host was the only member of the party who succeeded in gathering the white sprigs. He was invited to explain his success. "Oh," he remarked, "you know I am a manufacturer, and I have trained myself to observe flaws in certain goods when passing rapidly through the galleries." And in like manner, I maintain, may the faculty be trained in the case of the students. The training could go on *pari passu* with the teaching of physics, chemistry, anatomy, and physiology, in connexion with which courses the habit of observing accurately might be acquired, to be further developed in the out-patient department, wards, and *post-mortem* room. The opportunity to promote this kind of training will increase in the case of anatomy and physiology when these subjects are brought into closer touch with clinical work, as recommended by Keith, Berry, Vincent, Lewis, and others, the importance of whose suggestions, it is to be hoped, will be recognized and put into universal practice. These have for

their aim the realization of the vision of the prophet Ezekiel—to make the dry bones to live; the giving of a vital interest to subjects at present dead, at least in the mind of the average student; the bringing into prominence from the very outset their practical utility, and thereby furnishing a living continuity between the earlier and the later subjects of the curriculum.

The question of special instruction of our students in the diagnosis of early disease is intimately associated with this subject. It is recognized by all that the earlier a diagnosis is made the better for the patient, and notwithstanding this self-evident truth it is remarkable how little attention has been given to the training of students in the recognition of the earliest indications of disease. The wards are, as a rule, filled with examples of advanced disease, and the subjects selected for clinical lectures and demonstrations are usually conditions in which history and physical signs are as far as possible characteristic and strongly marked. And, of course, this is almost inevitable, for the student has but a short two years into which to crowd his clinical training, and he is naturally attracted by outstanding and obvious pathological changes in which the signs and symptoms are more or less gross and appeal to his untrained senses. It is evident that something must be done to help forward the student's training in this direction. At present, as things are, his opportunities are derived from attendance in the out-patient department of the hospital, where as a rule a large number of patients have to be seen, and the teacher is a member of the junior staff, and is not infrequently only just qualified. I have no wish to under-estimate the value of the out-patient teaching, but the diagnosis of incipient disease is at once the most difficult and the most important problem the doctor has to face, and yet it must be admitted that hitherto but little attention has been given to this phase of clinical medicine. It is generally supposed that the art of early diagnosis will be acquired later in the course of practice, but it is then too late, for in panel practice there is, I fear, contrary to the expectations of the authors of the present system, no such thing as early diagnosis. The truth is there is no time to work out an accurate diagnosis in an early case in a crowded consulting room in panel practice, and there is a danger of the aptitude becoming a lost art. For, on the one hand, the doctor has not the necessary time to devote to a careful examination, and, on the other, the tendency of the present day is to ignore physical signs and to rely altogether upon laboratory methods. I would therefore earnestly plead for some alteration in our system that will give due prominence to training in the methods of early diagnosis.

It is obvious that a thoroughly serviceable knowledge of the functions and structure of the human body in health and the possession of well trained senses—the ability to observe—are essential to successful diagnosis. Nevertheless, I believe I am correct when I state that comparatively few practitioners are familiar with the range of the limits of health as signified by signs evident to the trained senses. For instance, to take but one example, failure to recognize the fact that our stethoscopes employed in the examination of chests (heart and lungs) detect the widest possible differences in normal individuals, has been the source of much error in practice. The truth of this assertion was made apparent in connexion with recruiting examinations during the war, when thousands of perfectly healthy young men were graded low, or rejected altogether, on account of the erroneous interpretation of some physical sign. And, in the same way, every day life assurance problems are settled incorrectly on similar grounds. The fact is, when we recognize that a comprehensive knowledge of the functions of man, together with the indications of their working, is necessary to enable us to detect abnormalities, it is plain that the normal state demands our very special attention, for we are dealing with what is at once the most perfect and the most faulty machine of creation.

Students in future will be taught the working of this machine in such a way as will make it more easy for them to appraise at their proper value departures from the normal; and it will be the aim of the teacher to render his teaching more vivid and to demonstrate as far as possible its bearing upon clinical problems.

I am fully aware that there are objections to this attempt to abolish the line of demarcation between pure science and practical application, and that from a university point of view, on the ground that the foundations of applied science are ever extending, it would be a mistake to do anything that would tend to limit the range of the student's studies; but the patient must be our first consideration, and it cannot be denied that the practical side of the curriculum is hazardously short.

I must not conclude this dream of progress without a reference to the examination test which all students of medicine must pass before their names are inscribed upon the official Register. For long I have questioned the wisdom of the present system which wholly neglects to take into account the candidate's record as a student. He is known as a number, his anonymity is preserved as far as possible throughout the examination, and no notice is taken of the results of class, prize or scholarship examinations, or of what should be the most valuable evidence of teachers of industry and capacity during his period of training; indeed, as far as I know, except in the case of one or two universities, there is no official record kept. The examination is not competitive, and the object of the examining board, composed of home or internal and external examiners, is to impose a test that will safeguard the public. But as such a test it is necessarily very imperfect since it takes cognizance only of the present, ignores the past, and makes no attempt to anticipate the future. I welcome, therefore, the support and recommendation of the General Medical Council in this direction.

Let me briefly recapitulate. In the short time at my disposal I have not been able to do more than touch the outskirts of some of the more conspicuous problems at present confronting us for practical solution. I have reviewed the present standing of the medical profession in strength and weakness; and I have tried to point out how, in my judgement, certain weak places might be strengthened. I have looked at the selection, teaching and examination of the students, and have offered hints as to some ways in which these courses might be reviewed with advantage. I have laid stress on the all-important fact that self-education of the true doctor continues through the whole of his professional life, and calls for steady combination of study with practice; and I have endeavoured to show what invaluable aid and stimulus may be given to the individual doctor by placing within his reach co-ordinated methods of assistance in advanced work.

It is hardly too much to say that attention to post-graduate work is of even greater importance, and brings more fruitful results than the indispensable attention to undergraduate instruction. In this connexion I have dwelt on the value of resident appointments in hospital; on courses of post-graduate lectures; on post-graduate examinations after a considerable interval of practice; and I have outlined a scheme of almost unlimited possibilities in research work.

Accurate observations accurately recorded, strictly tested and verified, provide the one sure foundation of certain knowledge in place of guesswork. If such observations were systematically collected and tabulated; if every practitioner had free access to the record and the stimulus of knowing that further observations of his or her own would be heartily welcomed, we should before long gain a permanent rise in the level of medical efficiency.

As a profession we earnestly desire to serve the community to the very best of our ability. We desire to serve freely, to serve graciously, to serve effectually. We desire to safeguard health that by knowledge and foresight can be kept intact; to restore health that has been impaired or lost; and where restoration is impossible, to alleviate suffering and fortify endurance to the best of human power. With the standard of our high calling kept in view, we, in whose hands it rests at this present to shape the immediate course before us, are ambitious that we should leave to our successors an increased store of doubtful points definitely cleared up and settled; should leave certain obstacles on the way forward definitely removed; so that they, our successors, may be freed from the first to attack fresh, and perhaps still more intricate, problems which will assuredly present themselves for solution. I would fain echo the words of one of the world's pioneers:

"Now understand me well—it is provided in the essence

of things that from any fruition of success, no matter what, shall come forth something to make a greater struggle necessary."

Some considerable fruition of success is already ours; led by courage and confidence we shall triumph in many another encounter.

A Special Address

DELIVERED AT THE

EIGHTY-NINTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION

BY

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INDUSTRIAL HYGIENE: ITS RISE, PROGRESS, AND OPPORTUNITIES.

IT is just over a century ago since the British Parliament turned its attention to the fate of children employed in the mines and factories of this country, and little more than half a century ago since diseases due to occupation received similar recognition. Great Britain was the pioneer of industrial legislation. The utilization of water power and steam led to the rise of the factory system and to the growth of large towns. The "Industrial Revolution," which began about 1740, and the inventions which preceded and followed it, not only placed us as a nation in a high position in the world of commerce and made us wealthy, but it created new methods of employment associated with the subdivision of labour, as well as a new class of workers to meet the requirements. It also initiated problems, towards the solution of which, as the statesmen of the time had no experience to guide them, the laws which they framed could at the best be but only tentative and a makeshift. While the introduction of machinery made labour in the factories in one sense less irksome, it led to the employment of women and children, many of whom, owing to the long hours and low wages, rapidly broke down in health, with no financial assistance from the State or from the industry to fall back upon, so that to ill health were added the distressing circumstances of poverty and starvation with only the workhouse to look forward to. In order to prevent physical degeneration of the working classes it became necessary to improve the conditions under which labour was carried on in mine and factory by shortening the hours of labour for women and children, and by raising the age of child workers. The employment of children of seven years of age in our coal mines and factories, and the harsh treatment extended by overseers to them, since they were frequently beaten or handled roughly when they were found asleep at work, form unpleasant reading in the pages of the industrial legislation of this country. From the first decade of last century onwards to the Victorian period Parliament time and again shortened the hours of labour, restricted the employment of children and improved conditions within the factories, but even as late as sixty years ago little had been done to instil into the mind of the people the association of certain diseases with particular occupations, and how these diseases might be prevented. Thackrah, in 1831, had written upon the subject, and Arlidge, in 1892, had published his monumental work, but occupational diseases as a class had not yet caught on with the medical profession, and so matters drifted. Sir John Simon, at the dawn of the public health movement in this country, recognized how closely identical was the health of workers with the objects sought to be secured by a public health service, and that in the prevention of disease lay one of the most important duties of the medical profession. To-day the preventive side of industrial medicine is regarded as even more important than the curative. It was the meeting of the British Association in this city in 1889 which brought me into vital contact with industrial medicine, and which drew from me my first appeal for improving the conditions under which the manufacture of white lead was carried on. The time was opportune, the country was ripe for action, a spirit of reform and a desire for industrial betterment had penetrated into the House of Commons, with the result that the Home Secretary, then Mr. Asquith, appointed a White Lead Commission to inquire into the circumstances under which white lead was manufactured, and how the risk to health of the workers might be diminished. It was my fortune to be placed upon this and other commissions concerning dangerous occupations. In the Blue Books which these and subsequent committees published is contained a mass of useful information. Industrial hygiene may be said to have merged out of, or to have been a continuation of, parliamentary interference with the claims of employers to utilize labour almost to its breaking point. Occupation was never meant to cripple workmen, cause ill health or induce early death. It was thus that medicine was drawn into the social movement in which it plays an honoured part to-day. In few fields of human activity has the call for preventive medicine been greater than in the various industries of this country, with their former high mortality and sickness rates. Society, in the past, kept itself too far aloof from knowledge of the conditions under which certain trades were carried on, and even the workers themselves were not always aware of the dangers to which their employment exposed them. Ignorance is responsible for many of the calamities which overtake us. It became necessary to instruct workers and employers in regard to occupation and health, for to have knowledge is to be forearmed. Regulations drawn up by the Home Office, and meant for the welfare of workers, have from time to time been challenged by both employers and employed, and there is no objection to this, since at a conference of the parties concerned conflicting opinions may be modified, or, failing this, a compromise is effected, and work allowed to continue, during which fresh regulations can be given a trial.

Within the last few years the scope of industrial hygiene has widened. It includes not only consideration of the conditions under which work is carried on, the hours of labour, and diseases incidental to occupation, but it deals with the physical effects of work as seen in fatigue and how hours of work and rest may be correlated so that there may be obtained the maximum of production with the minimum of effort, also that the hours of respite from labour may be made sufficiently long for recovery from exhaustion to take place. The tendency has been to remove from labour any serfage element which may have clung to it as a remnant of bygone days, and to recognize that men and women are not mere machines, but that they are entitled to the opportunities of improving themselves mentally and physically. To-day industrial hygiene is no longer the affair of one nation but of all the advanced nations. The creation of the International Labour Bureau under the aegis of the League of Nations has raised industrial medicine to a higher platform, so that while the health of the workers is one of the main objects, and production is regulated by the physical fitness of the worker and by the hygienic conditions under which labour is carried on, the fact that industrial medicine has become international will incite backward nations to aim at securing a higher standard of health for their workpeople, as well as more efficient means of increasing production. Arising out of legislation passed for improving conditions of labour and shortening the hours of work, also proceeding through medical supervision of workers and the elimination of the unfit as well as the substitution of comparatively harmless for harmful methods of production, of industrial medicine it may be said that although it has made such rapid strides that many of the results obtained have become fresh energizing influences in the life of nations, yet many opportunities for good still lie in front of it.

Medical examination of workers before commencing their industrial career would no doubt create hardships, but the ultimate gain would transcend all these. Even with the ordinary precautions taken there would still be found a certain number of persons who would break down in health earlier than others, either as the result of diminished vital resistance or of idiosyncrasy. With the view of determining the susceptibility of individuals to poisons in particular trades Sir Kenneth Goadby has suggested the employment of blood tests, thus indicating that the liability to occupational disease, as in the case of infectious maladies, is largely a personal matter.

Lead Poisoning.

For several years Newcastle has been one of the principal centres of the lead industry. From the dales of Northumberland and Durham lead, either as ore or smelted, was brought into this city, but since the ores of Spain and Greece contain larger quantities of silver, and the smelted material can be readily transported to the Tyne, larger quantities of foreign pig lead have found their way into the factories on the banks of the river. Lead miners in this country do not suffer from lead poisoning; they have suffered in the past from pneumonoconiosis and pulmonary tuberculosis. The danger to health commences with the smelting of the ore, and the danger is repeated in certain processes in the manufacture and use of white lead. If anything is required to show what preventive medicine and Home Office regulations have accomplished in transforming this previously dangerous industry into one which, to-day, is comparatively safe, it is the record of the notification of cases of lead poisoning and of deaths therefrom over a period of twenty years.

The total number of cases of lead poisoning and of deaths from plumbism over the whole country drawn from Home Office statistics are as follows:

Year.	Cases.	Deaths.	Year.	Cases.	Deaths.
1900	1,018 including	38	1911	659 including	37
1901	863 ,,	34	1912	587 ,,	44
1902	629 ,,	14	1913	535 ,,	27
1903	614 ,,	19	1914	445 ,,	23
1904	597 ,,	26	1915	381 ,,	21
1905	592 ,,	23	1916	318 ,,	21
1906	632 ,,	35	1917	317 ,,	21
1907	578 ,,	26	1918	141 ,,	11
1908	646 ,,	32	1919	207 ,,	25
1909	553 ,,	30	1920 not yet published.		
1910	535 ,,	38			

The increase in the number of cases notified in 1919 and the larger number of deaths are attributed to the employment of men returned from the war and whose physique had been reduced, also to the re-employment of ex-service men who had been previously lead workers, and who had lost their tolerance to the metal. The number of deaths, it will be observed, has not been reduced in proportion to the number of cases notified.

If we take Newcastle similar improvement is observable.

Newcastle-upon-Tyne District: Lead Poisoning.

Years.	Males.	Females.	Years.	Males.	Females.
1900	187	17	1911	14	0
1901	102 (2)	17	1912	8	1
1902	73	3	1913	10	1
1903	57	6	1914	14	1
1904	65	7	1915	22	1
1905	49	1	1916	19	3
1906	40	2	1917	4	7
1907	34	3	1918	0	0
1908	69 (1)	6	1919	12	0
1909	24	6	1920	8	0
1910	10 (1)	1 (1)			

The figures in brackets ( ) are fatal cases, and are included in the totals.

Further confirmation of the above is evident if we take the admission of cases of lead poisoning into the Royal Victoria Infirmary over a period of thirty years. During the latter years of the decade ending 1890, before our inquiry began, there had been admitted into the Infirmary an average of 27 cases per year, of which 18 were women and 9 were men. In 1910 only 3 cases were admitted, and in 1920 only one case—a male.

It is not my intention to deal with the symptomatology of lead poisoning in detail. Here I would only remark that the severe forms of plumbism attended by blindness and by convulsions, and which were frequently observed, especially in female lead workers, thirty years ago and were extremely fatal, are now rarely met with even among male lead workers—a circumstance largely due to the abolition of stoving, to better means in use for the removal of dust, improved methods of production, also to weekly medical inspection of the workers, with power of suspension on the part of the doctor. In furtherance of these objects, and of the assistance rendered by Dr. Legge of the Home Office, Miss Anderson, the Principal Lady Inspector of Factories, and her staff, the Newcastle inspectorate, and by Professor Collis, I cannot speak too highly.

The abolition of female labour in the dangerous processes of lead manufacture in 1893 removed from the industry much of the stigma which had become attached to it as an unhealthy occupation, and while I was responsible for the recommendation, and had in consequence to withstand the hostility both of employers and employed, I believe that to-day manufacturers admit that it was the best thing for the trade. While both sexes are injured in their reproductive capacity by lead, the consequences of plumbism are more disastrous in women than in men. Miscarriage, stillbirths, and the death of infants shortly after birth from convulsions, are some of the sequences of lead poisoning of the mother, the interesting point being that while the conception may be killed by lead and thrown off prematurely the woman herself may exhibit no sign of the malady, nor have any of the symptoms of plumbism. In this respect lead poisoning recalls the action of the toxins of syphilis. A female lead worker can have several miscarriages and stillbirths, and she may also bear infants who die shortly after birth and in whose internal organs lead may be found, while she herself remains free from symptoms. With the ordinary symptoms of lead poisoning, such as colic and wrist-drop, you are all more or less familiar, but to many of you saturnine encephalopathy with convulsions is unknown. Some physicians seek to explain the nervous symptoms in this form of plumbism by pathological changes in the kidneys and the presence of minute quantities of lead in the brain; by others the symptoms are regarded as due to auto-intoxication consequent upon pathological changes in the liver and kidneys. The brain symptoms in these cases are not always the result of kidney changes, for the malady may occur without albuminuria, nor are they always due to the presence of lead in the brain, since the metal is not regularly found therein. The presence of structural changes in the liver places saturnine encephalopathy much on the same footing as those obscure forms of poisoning which occur in pregnancy and in syphilitic patients undergoing salvarsan treatment. It is a secondary poisoning. It is difficult to say what is the quantity of lead required in the body to cause death. There are no definite data. In the brain of one of my patients Professor Bedson found 4.04 milligrams of lead, estimated as metallic lead, and 3.41 in another. The cerebrum and cerebellum of a young female lead worker contained 34.6 parts of lead per million, or 0.779 grain of lead; and the same organs of another female lead worker 30.1 parts of lead per million, or 0.634 grain of lead. Taking the other organs of the body, Bedson found 37.8 parts of lead per million in the liver of one lead worker, equal to 1 grain per weight of organ, and 41.6 parts per million, or 0.819 grain of lead; in another, in the kidneys, 10 and 13.3, and in the spleen, 12 and 39 parts of lead per million.

Bilateral distribution of paralysis of limbs is suggestive of the operation within the body of a general poison—as witness "double wrist-drop" in plumbism, "double ankle-drop" in alcoholism and in poisoning by arsenic. Although "wrist-drop" is usually double in lead poisoning, the paralysis is frequently more marked in one arm than the other; the tendency is for the loss of power to be more pronounced in the limb whose muscles have been exposed to the greater strain, hence is explained the greater frequency with which in children the legs are more affected by lead than the arms. Although bilateral paralysis is characteristic of plumbism, there yet occur instances in which the loss of power is one-sided and its distribution extremely limited. In such cases the true nature of the malady may be overlooked. The presence of a blue line on the gums and the detection of lead in the urine are helps to a diagnosis. We know little of the minute one-sided degenerative lesions which occur in the brain of persons who are the subjects of chronic lead poisoning, and which are interesting from the workmen's compensation point of view. There may be only slight weakness of the muscles of one foot, accompanied or not, it may be, by feebleness of the muscles of the hand and wrist of the same side. Such is the picture of a lead-poisoned patient whom I saw in consultation for the first time nine years ago. He has never regained his physical fitness; he drags the right foot in walking; the grasp of the right hand is feeble, and there are flaccidity and weakness of the flexors of the distal phalanges of the fingers. The urine is free from albumin and lead; heart and internal organs are healthy, and his blood pressure is equal to 100 mm. Hg. By a physician seeing this patient for the first time the case would probably be regarded as late syphilis, but the paresis of right hand and foot developed

during the time he was the victim of subacute lead poisoning, and besides several blood tests have been made and always found to be negative. On a previous occasion I drew attention to the fact that a positive Wassermann reaction was occasionally found in lead-poisoned persons who had never had syphilis. When in Christiania last August I was asked to see a paint-works manager, aged 36, who, ten years previously when a steward in a vessel, was given twenty-four hours to have his ship coated with quickly-drying paints. He crushed the paint with his hands, and with the crew he worked hard for several hours, only making a break to partake of coffee, bread-and-butter, simply wiping and not washing his hands. A month afterwards there was loss of sensation in the tips of the right fingers and paralysis of the wrist and loss of sensation in the leg. Colic, rather sharp in character, developed, also diplopia. There was no blue line on the gums, so far as he remembers. There was obstinate constipation, the bowels were not moved for nine days. There is no specific history in the case; the patient's blood has been examined on several occasions, and has been in every instance found to be negative. There are feeble grasp of left hand compared with right, slight staggering, right knee-jerk absent, left present, and no longer diplopia.

A few months ago a plumber, aged 43, was sent to me from Greenock for examination. Seven and a half years ago, after having worked in all kinds of lead, he developed colic and diarrhoea, also paralysis of the left upper eyelid and of the ocular muscles, giving rise to diplopia from which he took two years to recover. In April of last year, when at work he again developed colic, had vomiting and diarrhoea. A day or two previously to this his left arm and left leg had become heavy and painful. Shortly afterwards speech became affected; this was followed by loss of power in the left side of the face and of the muscles of the left eyeball. There was never loss of consciousness. By the medical man who saw him an injection of a "German serum" was administered, with the result that the patient became worse, an uncontrollable diarrhoea supervened, also retention of urine. When I saw him he could not walk properly, the left arm below the elbow was somewhat rigid, there were incomplete paralysis of the left arm and leg, diplopia, pulse 120, blood pressure 180 mm. Hg, excessive left knee-jerk, and hardly any response on tapping the right patellar tendon. The heart was normal; there was no albumin in the urine but there was a distinct trace of lead. There were no basophiles in the blood, only a slight increase in the number of the polymorphs. Wassermann's tests were negative. We know that lead of itself is a cause of arterio-sclerosis without the kidneys being necessarily affected. The case was evidently one of thrombosis of small cerebral vessels, not of syphilitic origin but probably a consequence of lead, and as a sequel of the endarteritis there had occurred limited areas of degeneration in a portion of one cerebral hemisphere. It is because some of these cases so closely resemble vascular syphilis that I bring them before this audience. I have recently seen other instances of one-sided lesions in painters in whom there had occurred endarteritis of minute vessels of the brain, followed by degenerative changes and giving rise to only the most limited loss of muscular power, and which I could only attribute to lead in the absence of such other causes as syphilis and kidney disease. The Greenock patient took his case to one of the courts in Scotland and won it—an eminent professor of medical jurisprudence having taken the view which I had done that the man's illness arose out of his occupation.

The so-called lead-poisoning of painters requires further elucidation, for the last word has not yet been said upon this important subject. Are the symptoms always and really due to lead? The illness is usually attributed to the inhalation of vaporous material arising from the paint, to the absorption of paint which has fallen upon the skin, to the practice indulged in by some painters of holding the brush between their teeth in order to liberate both hands for a few moments when at work; to the inhalation of dust when sand-papering flat surfaces, and to the inhalation of fume emitted during the burning off of old paint. Acute symptoms may arise, such as severe headache, vomiting and colic, or there may occur wrist-drop, and when this develops and is bilateral it is always more pronounced in the muscles which have been most used. Considerable discussion has centred round the question as to whether the symptoms met with in house painters are the result of lead *qua* lead present in paint, or are consequent upon the inhalation of vapour arising from the solvents used, such as turpentine, benzine, and other spirituous bodies. In exposing animals to the vapour given off from freshly painted surfaces their health suffered, and in exposing others to the vapour of turpentine these animals also suffered, and at the autopsy I found the lungs engorged, and the tubular epithelium of the kidneys, on microscopical examination, the seat of cloudy swelling. Sir Kenneth Goadby is of the opinion that the illness complained of by house painters is more the result of the turpentine and thinners used than lead, and as the opinions of chemists are still divided as to whether lead is present in the emanations from painted surfaces, this is a subject to which I am giving, with other observers, fresh attention.

For some reason or other it was decided at the International Labour Conference of the League of Nations held in Washington last year that the use of white lead paint should be prohibited. The subject is to be discussed at a conference of the League of Nations in October. It is a vital question, since it threatens important industries. I have never found lead poisoning prevalent to any extent among house painters in Newcastle. If lead carbonate is no longer to be allowed to be used as a pigment something other will have to take its place. Such a substitute, while being innocuous to those who use it, would have to possess equal powers from a trade point of view to the material which it seeks to supplant. Of the pigments suggested I shall only mention two, namely, lead sulphate and zinc white. Lead sulphate is soluble in the gastric juice, and would therefore be harmful, and as regards zinc white, not only in my opinion does it not possess the resistance to external atmospheric conditions which lead carbonate possesses, but it frequently contains impurities such as arsenic, and since it too has to be mixed with thinners, inhalation of the vapours given off would not be free from danger. The subject demands further experimentative and unbiassed consideration, for since by regulations, as statistics show, the number of notified cases of lead poisoning has fallen from hundreds to tens, by still stiffening regulations, and by improved medical inspection, the dangers to health consequent upon the use of lead compounds can yet be materially reduced, and I base that remark upon personal experience of the cheap manufacture of pottery which is a home industry in many parts of Hungary. In my early visits to Hungary I found lead poisoning extremely prevalent. Familiar as I was with lead poisoning when as an industrial disease it was at its worst in Great Britain, this was nothing compared with that which prevailed in the pottery villages of Hungary. Several of the men who were employed in the industry were paralyzed in their limbs, as were also their wives and children. So large was the number of miscarriages and so heavy the infant death rate that in some of the villages there were hardly any children. The dipping of the ware was carried on in the living room; in this room the man turned the clay upon the potters' wheel and the wife assisted in dipping the ware in the lead glaze. In this workroom the family lived, ate, and slept. The dried dust given off from the dipped ware and from the splashed glaze rich in white lead was disseminated through the room. It was inhaled and it was swallowed with the food. The late Dr. Chyzer, who accompanied me in my visits, found lead in the underclothing of the children and in the blankets in the cradles. In my report to Mr. Csterenyi, then Minister of Labour, and to his successor in office, Baron Harkanyi, I recommended, among other things, that the dipping and the stoving of the ware should be carried out in a communal building away from the homes of the potters. This was done, and when a few years afterwards I again visited Hungary Baron Harkanyi invited me to go to Czákvar to see the result of the operations. I was received by Count Esterhazy, who subsequently became Prime Minister during the recent war, and conducted by him to the communal workshop, where everything was in perfect order. Dr. Grässer, the village medico, accompanied us. He had prepared for me a list of the number of cases of lead poisoning which had occurred in Czákvar for twenty-eight years. Between 1885 and 1912—that is, in twenty-eight years—there were 655 men and 193 women, or a total of 848, who had suffered from lead

poisoning. In the decade for 1880 the number of potters' families in Czákvar was about 100; at the end of 1906 there were only 72 men and 53 women who were associated with the industry, and in that year there were 37 cases of lead poisoning. In the year 1912 the number of potters' families had fallen to 50, with 14 cases of lead poisoning. By this time the potters had begun to work under the new regulations. When I again visited Czákvar in August, 1913, only 3 cases of lead poisoning had occurred during the eight months, and one of the most gratifying things Dr. Grässer said to me was that on the day previous to my visit he had gone over the whole of the large village trying to find a child suffering from lead poisoning, and that he had been unable to find one. If such a satisfactory result can be obtained by improving the methods of production without dislocating an industry, is it not advisable, before rushing to such an extreme measure as prohibition, to see first what regulations can accomplish? If additional evidence is required to support my argument, it can be seen in what has been achieved in the manufacture of pottery in Great Britain.

When Sir Edward Thorpe and myself, at the request of the Home Office, undertook an inquiry into lead poisoning in the Potteries, there had been several deaths and much ill health due to plumbism. On concluding our inquiry we did not recommend that the use of white lead glaze should be prohibited. We suggested rather that for certain kinds of cheap ware, also that required for sanitary purposes, a satisfactory glaze could be found free from lead, but that for finer types of earthenware which manufacturers insisted required lead, a glaze containing the metal might be allowed so long as the lead was fritted and thereby rendered more insoluble, and the results are seen in the marked declension in the number of cases of lead poisoning.

Lead Poisoning Cases.

Whole Country (Totals).

	Potteries.		Paint and Colour Works.	
1900	200	(8)	56	(1)
1901	106	(5)	56	(0)
1902	87	(4)	46	(0)
1903	97	(3)	39	(1)
1904	106	(4)	32	(1)
1905	84	(3)	57	(1)
1906	107	(4)	37	(0)
1907	103	(9)	35	(1)
1908	117	(12)	25	(0)
1909	58	(5)	39	(2)
1910	77	(11)	17	(1)
1911	92	(6)	21	(0)
1912	80	(14)	19	(0)
1913	62	(11)	22	(1)
1914	27	(6)	21	(0)
1915	26	(4)	12	(0)
1916	23	(7)	22	(0)
1917	15	(7)	10	(0)
1918	11	(1)	3	(0)
1919	21	(8)	11	(0)

The figures in brackets ( ) are fatal cases and are included in the totals.

Phosphorus and the Manufacture of Lucifer Matches.

If there is one industry to which industrial hygiene has been of the greatest service it is the manufacture of lucifer matches. Between 1900 and 1907 inclusive, out of 4,000 lucifer match makers in this country, 13 suffered from phosphorus necrosis of the jaw-bone. Matters were even worse in Austria. Between 1900 and 1908, among 4,500 lucifer match makers, there occurred 74 cases of necrosis; but Teleky, as the result of a personal inquiry, found that in the ten years 1896–1905 there had occurred at least 350 cases.

I visited match works in England and Scotland, in France, Prussia, Belgium, Sweden, and Hungary, and I saw some of the ravages caused by phosphorus. In Prussian Silesia—to take only one instance—I found a woman, working in a match factory, the whole of whose lower jaw had been removed by a surgeon on account of necrosis. It is the white or yellow phosphorus which does the harm, the red, or amorphous phosphorus, is free from risk. There are two types of phosphorus poisoning: (1) the constitutional known as phosphorisme, in which there is anaemia and albuminuria and a peculiar fragility of the bones, so that an affected workmen going along a road may have the long bone of one of his legs broken simply by the muscular effort required to lift his foot on to the footpath; and (2) the local form known as *phossy jaw*, an extremely painful affection in the early stages, and one which ends in a slow death of the bone. Once this takes place the decaying bone keeps discharging pus into the mouth, and as this is swallowed with the food it causes gastritis, or it finds its way into the trachea and sets up a bronchopneumonia. When the disease is seated in the upper jaw it may extend to the base of the skull and cause a fatal septic meningitis. It was this unhealthy industry which Sir Edward Thorpe and I were also invited to report upon. Meanwhile chemists had set themselves the problem of finding a substitute for the dangerous white phosphorus. At Aubervilliers, near Paris, I saw several experiments carried out with several suggested substitutes, but the one which seemed to fulfil all requirements was the sesquisulphide of phosphorus. In this country a large firm of matchmakers was extremely wishful to use scarlet phosphorus, since they believed it to be harmless, but as I found on experimentation that scarlet phosphorus set up acute structural changes in the brain and caused death, the request was not granted. Since the introduction of sesquisulphide of phosphorus into lucifer match factories not only has phosphorus necrosis disappeared and the industry become free from danger, but as the matches now in use are no longer poisonous, suicidal and the accidental deaths of infants from phosphorus poisoning have ceased. Beyond an occasional dermatitis arising in workers as a result of contact with the sesquisulphide of phosphorus, the whole industry has become transformed from a dangerous to a harmless trade.

Carbon Monoxide Poisoning.

It is unnecessary to dwell upon the symptomatology of acute carbon monoxide poisoning, but as an illustration of acute poisoning by the escape of waste gas from the engine into a closed motor-car, I will briefly mention the case of two patients whom I saw in consultation. These gentlemen, aged 72 and 56 respectively, had motored from London to Yorkshire. Breaking their journey in York for a cup of tea, the younger of the two occupants of the car complained of headache and a feeling of sickness which prevented him taking tea. On the car reaching its destination both of the travellers were found to be deeply unconscious. It was not until the early morning that oxygen was obtainable. Three and a half hours after the use of oxygen there were signs of returning consciousness in the younger patient, and it is to him I chiefly refer. In the early stages both pupils were found to be widely dilated, the pulse was 136, respirations 38; there was also intermittent muscular rigidity amounting at times to opisthotonos. When I saw the patient later on in the day there were gleams of consciousness, the face was flushed, the pupils were mid-dilated, the right responding more slowly to light than the left, there was involuntary micturition, knee-jerks were excessive, plantar reflex was vigorous. Babinski's sign was absent, heart and lungs were normal, the temperature had risen to 101.4°, and the pulse and respiration had fallen to 120 and 36 respectively. The blood gave the spectrum characteristic of the presence of carbon monoxide, and on microscopical examination it showed a marked leucocytosis affecting particularly the polymorphs and lymphocytes. This patient slowly but imperfectly recovered. Six weeks afterwards he was the subject of insomnia; was restless and fidgetty; he was the victim too of involuntary muscular twitchings and of an inability to apply himself to work. Although it is twelve months since the accident there still remains a considerable amount of mental depression and of physical and mental unfitness for work. The older patient who, in the early stages and when only partially conscious, was the subject of a restlessness that made it difficult for him to be restrained and kept in bed, has made an excellent recovery. His blood also responded to the spectroscopic test for CO.

In my book on *Diseases of Occupation* I describe some of the after-effects of CO poisoning met with in men who had been employed in charging blast iron furnaces. In these men, after the early symptoms of headache and sleepiness had passed away, there occurred incomplete loss of power in the limbs; subsequently speech became affected. Recovery was incomplete, for although the power of walking returned, the gait was slow and stopping; the grasp of the hand, too, was feeble. There were nystagmus and a degree of nervous excitement and exaltation such as one occasionally observes in toxic hysteria. Two years afterwards the condition of these men, from a health point of view, had but little altered for the better.

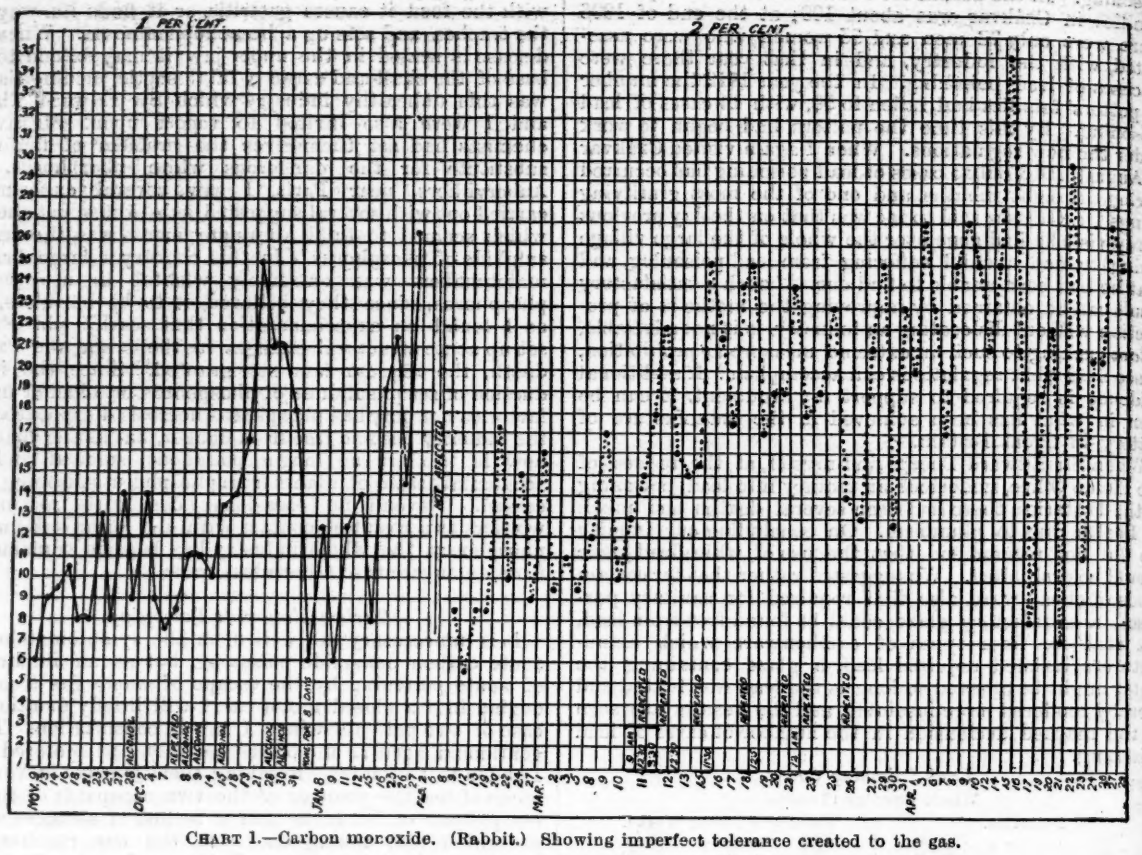

CHART 1.—Carbon monoxide. (Rabbit.) Showing imperfect tolerance created to the gas.

We are not quite familiar with the effects of small quantities of carbon monoxide daily inhaled over a lengthened period, nor with the pathological changes which may be set up in the body. To this subject Professor Glaister and Dr. Dale Logan have given careful study. Of two things I am convinced: one is that the inhalation of minute quantities of CO is probably the cause of some minor forms of illness which are not diagnosed, and the other is that a certain tolerance can be created in regard to CO. Dr. D. W. Inglis of Hebburn has had the opportunity of examining boys who are employed in a large iron works on the banks of the Tyne. Several of these boys after working a few months complain of general lassitude and a feeling of weariness which the physical character of their employment does not explain. They cannot join in games nor undergo the exertion of boys of their own age. If they attempt to do so they suffer from palpitation and breathlessness. Their appetite gradually becomes impaired and they become the subjects of insomnia. In them, too, the rosy hue of health is replaced by a peculiar pinkish coloration of the cheeks. In none of them is there the appearance of anaemia. Dr. Inglis traced the cause of their indisposition to the inhalation of CO in the brass-melting department of the factory. In the blood of one of the boys he found on spectroscopic examination evidence of the presence of CO. On questioning the men employed in the brass foundry some of them reminded him that years ago as boys they too had gone through the same experience as the lads were having now, that they had been treated by him for the same malady, and that as they had grown older they no longer suffered. These cases suggest a greater susceptibility on the part of growing lads to the harmful influence of CO than adults, also that a degree of tolerance to the gas is probably created.

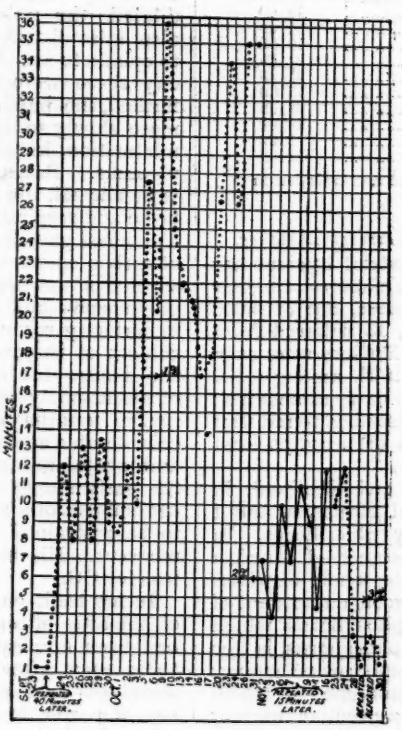

CHART 2.—Carbon monoxide. (Rabbit.) Tolerance to the gas.

The question of tolerance attracted attention several years ago and was dealt with by Naismith and Graham in the *Journal of Physiology* in 1906. Guinea-pigs were allowed to inhale CO until there occurred a 25 per cent. saturation of the colouring matter of the blood with the gas. They received the gas daily for several weeks. Most of the animals gained in weight; they apparently suffered no inconvenience; the red blood cells increased in number and by this means the blood was compensated against the CO. The experiments were carried further so as to produce 35 to 45 per cent. saturation of the haemoglobin, and they found that when a normal animal was placed in an atmosphere sufficient to cause 45 per cent. of haemoglobin saturation, it died in from three to four days, while an acclimatized animal remained in good health. Haldane showed that when an animal is exposed to 0.08 per cent. of CO in air the haemoglobin will in due course become almost half saturated with CO. Since men, like animals, can become acclimatized to CO it is a question worth considering whether men who in their occupation daily run the risk of being exposed to the gas should not undergo training in regard to it. How long the tolerance lasts I am not prepared to say, but these charts convey some idea of the tolerance which is created. A considerable degree of tolerance of uncertain duration develops with exposure to 1 and 2 per cent. of CO, but it would appear as if after exposure to 3 per cent. the blood during twenty-four hours is unable to rid itself of CO to any extent before the next reinhalation of gas. It is difficult to say just how CO is eliminated from the blood, but it can scarcely be a mass

elimination; it is more likely that minute portions of the haemoglobin of the red blood corpuscles, probably the peripheral, first give off the gas, and having once again become fairly normal haemoglobin, this on re-exposure to CO readily absorbs the gas and the animal dies asphyxiated.

Mining.

Although a hazardous occupation, mining is not so dangerous as it was a few decades ago. Taking the mines generally, coal, ironstone, and metalliferous, the number of persons employed therein in 1851 was 220,000. At that date the number of deaths from accident was 960, or 4.5 per 1,000. In 1912 the number of persons employed was 1,089,090 and the total deaths 1,550, or about 1.37 per 1,000 employed. On casually looking at the figures supplied by the Home Office it would at first sight appear as if no important change had taken place in regard to the number of deaths, but when the number of workmen is considered it is observed to be five times greater in 1912 than it was in 1851. The number of accidents remaining the same in a population five times greater than in the early half of last century, this circumstance shows that the dangers of the occupation have been reduced to one-third what they were. In 1851 the number of miners killed by accident was 4.35 per 1,000, in 1912 it was 1.37 per 1,000, a reduction of two-thirds. The largest number of accidents occurred between the ages of 25 and 35, and the same remark applies to accidents which disable men for more than seven days. Falls of ground appear to be the most common cause; they accounted for 446 cases in 1912; the deaths caused by explosions of coal dust were 9.4; 6.1 were shaft accidents and 26.3 per cent. were due to miscellaneous causes underground. The number of deaths caused by explosions of fire-damp and coal dust is fortunately small. For the ten years prior to 1912 the average death rate from this cause was 0.168, and in 1912 it was 0.138.

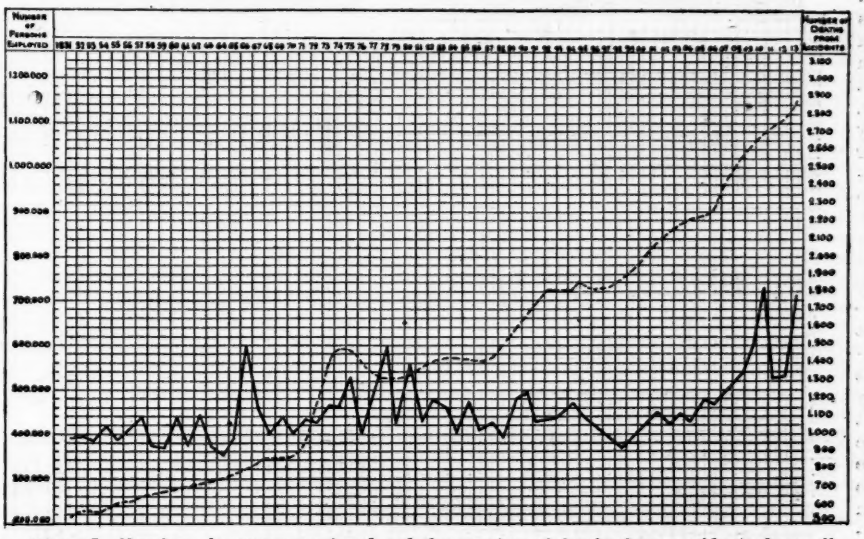

CHART 3.—Number of persons employed and the number of deaths from accidents from all causes at mines of the United Kingdom both under and above ground from 1851 to 1913. (From 1851 to 1860, coal mines only; from 1861 to 1872, coal and ironstone mines only; from 1873 to 1913, all mines under the Coal and Metalliferous Mines Regulation Acts.) "Persons employed" to be read from left-hand scale. "Deaths from accidents" to be read from right-hand scale.

The reduction in the number of deaths of miners is the result of careful inspection of the air in particular workings before the miner descends to the hewing of coal, of better signalling, and improved ventilation by the double shaft system, also of better supervision of the haulage. As showing the improvement in the death rates per 1,000 men employed we need only glance at the results in the Newcastle and Durham areas:

Deaths per 1,000 Employed.

Newcastle Area.		Durham Area.	
1864–1872	= 2.64	1873–1882	= 1.992
1873–1882	= 1.42	1883–1892	= 1.290
1883–1892	= 1.35		

Under the Workmen's Compensation Act of 1897 no compensation was paid to miners until they had been off work for a clear fortnight, but the Act of July 1st, 1907, provides for compensation being paid if the miner is disabled for one week, also that if disabled for fourteen days he receives compensation for the first week. In some of the areas the number of cases of accident of two weeks' duration or a little more was in 1918 double what it was in 1906. The rise in the figures suggests that the men laid off work for two weeks where one formerly sufficed; and as regards major accidents, but which do not last more than twenty-six weeks, the information is equally interesting. In one area in 1910 there were 29,400 accidents; the weeks paid for numbered 130,000, or 4.44 weeks compensation per person consequent upon accident. In 1920 there were 15,600 miners injured, with 76,500 weeks paid for, or 4.9 weeks per person.

In these days, when coal miners and their social circumstances have been so much before the public, it may not be out of place if I draw attention to what their work has been during the last twenty years:

	No. of Men Employed.	Output of Coal in Tons.
1900	767,901	225,170,153
1905	843,418	236,111,150
1910	1,032,702	264,417,588
1914	1,133,746	265,664,393
1915	953,642	253,179,446
1916	998,063	256,348,351
1917	1,021,340	248,473,119
1918	1,008,857	227,714,579
1919	1,191,313	229,743,128
1920	1,218,224	229,503,435

As coal miners are a healthy class, and do not suffer from the form of pulmonary diseases to which gold miners are liable, I have simply drawn attention to the hazards attending them in their occupation.

Fatigue.

If there is one side issue of industrial hygiene which has recently attracted attention and to which an address of this nature must refer, it is the subject of fatigue. A hundred years ago the world moved, as the saying is, more slowly than it does to-day. Men took things more quietly, there was neither the strain nor the competition characteristic of modern times. Hard work was followed by fatigue then as now, but it affected principally the muscular system; to-day it falls more upon the nervous system. Collective work is carried on in over-heated factories amid the din of machinery and it demands close attention. The reality of fatigue was brought home to us by the large number of men and women who broke down in munition work during and after the war. There is a limit beyond which the human machine cannot produce satisfactorily. Fatigue as subjectively experienced is a series of ill-defined sensations not always localizable, attended by disinclination for work and by a desire to rest. Professor Drever[1] thinks that the word "weariness" pretty accurately describes the subjective state in the individual, and that objectively fatigue can best be defined in terms of output, as shown by a lowered efficiency in the organism, and revealed by impairment of the quality, and diminution of the quantity, of work done. The delicate nerve cells and nerve endings of the human body become readily fatigued, but if we take fatigue to mean an inability to carry on as previously, then fatigue is not confined to living tissue alone, for a similar event occurs in the inorganic world. Steel wires when over-strained play out and behave as tired nerves. It would be of the greatest assistance if we could with a certain degree of definiteness ascertain just to what number of hours a man can work before his energy begins to fail, for once this takes place, if work is continued, it is unprofitable. Clearly the number of hours of work cannot be the same for all individuals or for all trades. As regards fatigue, much will depend upon the previous health and upbringing of the worker, how

he is fed and housed, and how he spends his leisure hours.

The recent war has been followed by disastrous consequences in the case of many of the discharged soldiers. The long weary vigil in the first line of trenches and the hardships endured, also the comparatively idle months spent away from the firing line, have made many of the men unwilling or unable physically to return to their previous employment. Some of them have lost their taste for work, and they clamour, like those who remained at home, for shorter hours of labour. Shortening of the shifts and a change in the hours of work are notable facts of the times. Men no longer go fasting to work at 6 o'clock in the morning and break fast in the factory at 8 o'clock. They leave home, or ought to, after a comfortable breakfast in time to reach the factory by 7.30 a.m., and, as Collis and R. M. Wilson in their writings show, it has been to the advantage of employer and employed. Better time-keeping has been the result and there has been less sickness. Shortening of the hours has in most industries been followed not by diminished but by increased production and by a rise in wages, but as there is a limit to which hours can be shortened and productive efficiency retained, it is a question whether, in some trades, this limit has not now been reached. It is unwise to work men and women to the last unit of their energy, for not only is work under these circumstances never so good, but fatigue—although the contention is not supported by Dr. Vernon—may become a cause of accident. It is now generally admitted that fatigue is the result of the action upon the tissues of such poisonous substances as carbon dioxide and lactic acid formed by the chemical dissolution of the glycogen of overworked muscles.

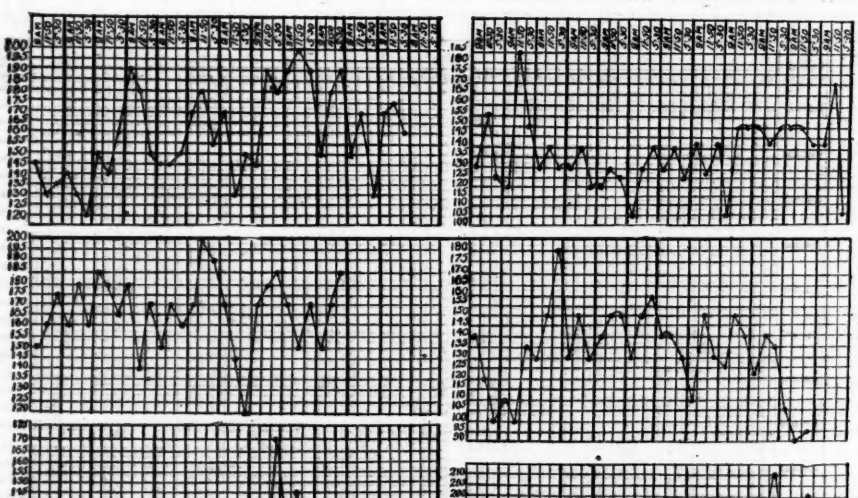

CHART 4.—Register of hand-grips in female munition workers, showing occasionally higher grips just before leaving off work for the day than on commencing it.

These bodies act not only upon the muscular tissue itself and the nerve endings in the muscles, but since they find their way into the blood stream they poison the higher nerve centres in the brain, thus converting fatigue, the outcome primarily of localized changes in the neuro-muscular apparatus, into a general state of the organism, and of these two forms of fatigue, central and local, the central or general fatigue is the more important.

We are familiar with the excellent research work which has been done by the Medical Research Council in regard to fatigue, and by such enthusiastic workers as Vernon, Leonard Hill, Stanley Kent, Myers, and others, that it is unnecessary for me in the short time at my disposal to traverse ground they have already so well covered, but there is one aspect of the question I will allude to, and that is the condition of blood in fatigue.

Blood in Fatigue.

It is known that the transference of blood from a fatigued to a healthy animal produces symptoms of fatigue in the receiving animal. Following up this fact, Dr. Otto Burkard of Gratz [3] has demonstrated the presence of a leucocytosis in the blood after exhausting work—a form of leucocytosis which Grawitz named myogenous. He found this in healthy men who had been subjected to hard work from thirty to forty minutes. Even as early as fifteen minutes after the exercise there is already observable an appreciable increase in the number of white corpuscles. There may be no further increase, for when signs of fatigue become manifest there may occur a diminution in the number of leucocytes. After the individual has rested for an hour the condition of the blood is again practically normal. An interesting fact in Burkard's investigation is that all the white corpuscles are not affected. The slight leucocytosis which occurs after the first fifteen minutes concerns mainly the lymphocytes, but after a period of thirty minutes' work these diminish, and their place is taken by neutrophile corpuscles, and the explanation he offers is that when muscles are in active operation they produce substances which, passing into the blood stream and circulating in it, stimulate the blood-making tissue of the medulla of bone. Grawitz regards this myogenous leucocytosis as physiological and as necessary to the organism in order that it may detoxicate itself, so to speak, from the harmful substances. When, therefore, during occupation the work is hard and is continued day after day, the repeated stimulation of the osseous medullary tissue by causing an over-production of neutrophile cells may become injurious not only to the medullary tissue itself but to the body as a whole. He compares daily work, which is physiological, with fatigue, which is pathological, and he asks himself the question whether the myogenous leucocytosis which is physiological persists, and he tries to find an answer in the kind of leucocytes which are present in the blood. The blood of healthy individuals contains polymorph neutrophiles. These constitute one of the completely developed types of leucocyte. In the blood of persons suffering from infectious disease mononuclear cells are found, some of which are immaturely developed owing to the rapidity with which they have been thrown off by the medulla of bone in its reaction to the toxins circulating in the blood. Such a leucocytosis is not physiological, for the stimulus which has given rise to these cells has exceeded that which operates in normal conditions. Burkard examined ten young healthy men who were working in a glass factory. During nine hours of work they were pretty constantly in movement carrying hot glass to a refrigerating apparatus. Films of blood were taken before work, also three and nine hours after work; these were suitably stained and examined, and he found an increase of neutrophiles of the pathological type, an increase which was proportional to the duration of the work. Burkard's opinion, therefore, is that fatigue can be detected by an examination of the blood before fatigue has developed to such a degree as to be harmful to the individual. He finds, as I have already mentioned, the same type of leucocytosis as prevails in infectious fevers. I glean, therefore, from Burkard's investigations that while fatigue, as first experienced by workmen, primarily manifests itself in the muscles and subsequently in the nervous system, it is this alteration of the blood content, consequent upon over-stimulation of the medullary tissue of bone, which is largely responsible for that reduction of the vital resistance which predisposes fatigued persons to illness.

During the war, when Dr. Pallett was called up for military service, I was requested to take charge of the munition workers in the filling shops at Derwenthaugh and Lemington Point. I thus became responsible for the health of several hundreds of men and women belonging to Armstrong's works. The firm was fortunate in having as the manager of its three munition factories Mr. Pike. It may interest you to know that Lemington and Derwenthaugh were the first factories established to render aid to the Government after the outbreak of the war, and as an illustration of the part these works played in helping to win the war, I may say that during the years 1914–1918 the Derwenthaugh factory turned out 12½ million rounds of 18-pounder high explosive and shrapnel shells, weighing 181,250 tons, the total weight of the explosives alone used being 9,774 tons; that at Lemington and Alexandria factories, the total number of 18 in. to 3 in. shells filled was 3½ millions, the total weight of which was 145,888 tons; the number of 18-pounder shells charged with lyddite was 4½ millions and the total weight of the explosives used in connexion with these was 19,398 tons. In order to enable the Elswick firm to carry to a successful issue this gigantic task, the work was carried on under a day and night shift system. As several of the munition girls lived a few miles from the city and had to travel by train, many of them had to rise as early as half-past four in the morning, and it was frequently 7.30 to 8 o'clock before they reached home in the evening. Notwithstanding this and the difficulty of obtaining proper quantities of suitable food, during the control, there were remarkably few breaks-down in health, considering the long hours of work and the hardships incidental to transport. Nor as the result of exposure to and handling of the high explosives was there a large amount of sickness among the male and female operatives. There were several cases of dermatitis, anaemia, throat and stomach troubles, but during the two years and more that I had charge of the health of the workers no death, fortunately, occurred from T.N.T. poisoning and no serious illness traceable to the occupation. My predecessor in office handed over to me the works in good hygienic order, also hundreds of workers in, comparatively speaking, good health, so that it was easy for me to carry on.

I was anxious to ascertain to what extent fatigue was experienced by the female workers. No method of estimating fatigue hitherto in vogue has been quite free from defects, so that the simple method of testing muscular efficiency which I employed is not above cavil. With the ordinary spring dynamometer used in hospital practice for estimating the muscular strength of patients the hand-grips of women were taken by the lady supervisor, a B.Sc. of a university, before breakfast, before the mid-day meal, and again just before giving up work in the evening. It was to be expected that at the end of a nine-hours' shift the instrument would register less than the figures obtained in the earlier hours of the day, and while this was usually the case it was not so in every instance, for on certain occasions, as seen in the charts, the evening grip registered higher than that of the morning or mid-day. Admitting that the value of the readings of the dynamometer is diminished by "knack" or the particular manner in which people handle it, yet it cannot be said that either this circumstance or habit played any recognizable part in the results obtained. The occasional increase of muscular strength was more frequently observed in women who were employed in such heavy work as shell shifting. I am unable to offer any explanation as to the increased muscular strength at the close of the working day.

Industrial Disease and Compensation.

It is only within recent years that diseases arising out of employment have been scheduled under the Workmen's Compensation Act. Previous to this accidents arising in the course of work had been compensated. An accident was a definite fact; something had occurred at a particular hour on a particular day, that there was no doubt as to the relationship of the injury and the employment, but in the case of an industrial disease, such as plumbism, the malady had developed so insidiously that it could not be traced to one particular day or to the absorption into the body of a definite quantity of lead. It was owing to this indefiniteness, so jurists pleaded, that occupational disease could not be considered as an accident occurring at work and therefore entitling to compensation. Industrial poisoning, however, might be regarded as an accident if when a man was at work he was suddenly overpowered by an escape of gas, such as carbon monoxide, and yet the same man exposed for weeks or months to a leak of carbon monoxide and whose health had become slowly undermined, perhaps even more ruined than a fellow workman who had had a fractured limb or been acutely poisoned but had recovered, would have been refused compensation. To bring occupational disease within the scope of the Workmen's Compensation Act it was necessary to drop the idea of regarding such maladies as accidents and to consider them as incidents arising in the course of employment, and caused by it, and thereby entitling to compensation. The law had to be modified so as to include these diseases, and here I would remark that the greatest care and discretion ought to be exercised by medical men in expressing their opinions and in signing certificates as to the complaints of men and women who are employed in occupations that are known to be unhealthy. The spoken or written word is always difficult to retract. Painters, white lead workers and plumbers, for example, are liable to the same illnesses as other mortals. Without careful consideration it is not enough to accept occupation on the statement of a patient or his friends, as the cause of his illness. A few months ago I was consulted by an insurance company in regard to a claim for compensation in the case of a discharged soldier, aged 43, who had died under the following circumstances. During the war, when in Catterick Camp, he had been engaged in painting huts; he developed colic, and as his health was unsatisfactory he was discharged. After a few months' rest he resumed his occupation as a house painter. One evening after tea he was suddenly seized with acute abdominal pain, but did not vomit. Becoming worse, the doctor who saw him, on receiving the history of the patient's occupation, called the illness "lead poisoning," and ordered poultices to be applied to relieve the pain. Next morning the patient rambled a good deal, and raising himself in bed he suddenly expired. Knowing that death in uncomplicated lead colic is an extremely rare event, and that the symptoms exhibited during the last hours of life did not quite confirm the diagnosis, we made a *post-mortem* examination of the body on the following day, and we found a perforated gastric ulcer with generalized peritonitis. In the case of other persons who had been working with lead products and whose abdominal pains had been attributed to plumbism, I found the cause of death to be not saturnine poisoning but malignant disease of the intestine. Each case of occupational disease claiming compensation must therefore be judged on its own merits. But for the *post-mortem* findings in the case I have referred to, compensation would in all probability have had to be paid.

It is with trade poisons as with those of an infectious origin, some persons are more susceptible than others. The amount of posion absorbed may be so small that for a long period no harmful effects follow, and then without any explanation other than perhaps some failure in the elimination whereby the balance of intake and output is broken, the retention limit is overreached, and symptoms unexpectedly arise. To the slow absorption and tardy development of symptoms the term chronic industrial poisoning is given, but even in these cases spmptoms may suddenly and unexpectedly arise, so that while the symptoms appear to be acute they are the outcome of a long period of gradual absorption. It is no uncommon event to find men who have worked in a dangerous trade for many years to be healthy and free from complaints. In these men a degree of tolerance has been established, but should some unusual incident arise the symptoms of trade poisoning may without warning suddenly develop, a circumstance which reminds us that industrial poisoning can be latent and, therefore, can be overlooked.

A few years ago I had a male patient under my care in the Royal Victoria Infirmary; he was suffering from lead poisoning, there were the usual signs and symptoms, colic and double wrist-drop, with signs of aortic dilatation. He made a good recovery and acting upon my suggestion he did not return to the lead works, but followed some other employment. Two to three years afterwards he was re-admitted into the infirmary under the care of one of my colleagues, who, finding him the subject of aortic aneurysm, prescribed for him fairly large doses of potassium iodide. Within two weeks the patient redeveloped double wrist-drop, there reappeared a blue line on the gums, he rapidly

emaciated, and in the course of a few weeks he died, not from aortic aneurysm, but from plumbism. It only required in this patient a few doses of potassium iodide to cause death by stirring into activity and by inducing reabsorption of lead which had been lying dormant in the tissues for years.

Since industrial medicine has come to stay, facilities will in the future have to be provided to medical students and young graduates to become familiar in a practical manner with its objects. Never were the times more opportune than to-day. The prosperity of a nation is intimately bound up with the health of the people who compose it. Preventive medicine has, practically speaking, swept these islands clear of typhoid fever and considerably reduced the mortality of diphtheria. What it has accomplished on the side of public health it can also accomplish in regard to occupational disease. The die has been cast. There is a psychology of industry just as there is a physiology. Psychology is no longer simply "the science of mind or soul," but "the science of the facts of human nature and behaviour," and there is no department of human activity which offers greater scope for its study and application than industry. Employers no longer regard "industrial hygiene" as something to be turned down on the ground of its interference with labour and the conditions under which it is carried on. They recognize that it introduces into industry just that something with a touch of humanity in it which softens the asperities of labour, makes occupation more healthful, and tends to bring employers and employed into closer touch with each other. Had it not been for "welfare work" carried on during the years 1914 to 1918 the enormous productions of munitions could hardly have taken place, and without it we would have lost the war. Industrial medicine and welfare work go hand in hand. Invention and chemical research tend to make industrial processes, if not more complicated, sometimes more dangerous, as was the case in the early days of the war with the handling of certain high explosives, but the same inventive skill which created temporary dangers showed itself equal to supplying an antidote to them or of finding a substitute. In the ever-enlarging sphere of industrial enterprise, to which the various sciences are contributing, and the needs of the world are calling for, lies the opportunity of Industrial Hygiene.

REFERENCES.
[1] *The Psychology of Industry*, p. 61. Drever—Methuen. [2] *Il Lavoro*, No. 3. Milano, July 31st, 1920.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUPERFOETATION.

THE following case is of interest on account of the difference in the period of gestation between the two foetuses.

On November 20th, 1920, I was consulted by Mrs. X., aged 18½ years, as to whether she was pregnant or not. She had been married on September 30th previously, and had had scanty menstrual flow in early October and early November. She had morning sickness and there was some slight knottiness in the breasts. I told her that most probably she was pregnant. On March 1st, 1921, she consulted me again. She had had slight haemorrhages at irregular intervals, but was undoubtedly pregnant, for there were foetal movements, and the foetal heart could be heard. She had some pain, though no definite contractions could be felt.

At 6 a.m. on March 2nd I was called to see her as she had had a severe haemorrhage. The os was partly dilated, membranes were presenting, and she had frequent though not very strong labour pains, with some haemorrhage. A dose of pituitary extract arrested the haemorrhage, and I saw her at intervals during the day. At 9 p.m. the os was well dilated and the breech was presenting; I ruptured the membranes and the child was born shortly after. It was a five months foetus, and it breathed and cried for about fifteen minutes. The placenta followed quite normally, the uterus contracted, and there was but little haemorrhage.

She did well till the morning of March 4th, when at 2 p.m. I was summoned in a hurry. I found a second abortion had taken place, consisting of a complete, perfectly shaped cast of the uterus, which contained a foetus of about six weeks. Judging from the shape of this abortion, it would appear that she might have a double uterus, as the cast had evidently filled the whole cavity. The five months child may possibly have been contained in an irregularly shaped uterus, and hence the abortion.

The patient had to leave Colombo as soon as she was fit to travel, so I did not have the opportunity to make an exhaustive examination. The case, however, is at any rate interesting in so far as it shows that ovulation and impregnation can take place during pregnancy—unless it may be that, in this case, beyond the cervix the whole internal generative organs were duplicated, in which case pregnancy in one uterus evidently has no effect on the other uterus and its appendages.

Colombo. R. E. INGRAM-JOHNSON, L.R.C.P. and S.Ed.

Reviews.

BIOCHEMISTRY.

Two books reach me together, one by Professor BENJAMIN MOORE [1] of Oxford, the other by Professor BRAILSFORD ROBERTSON [2] of Adelaide. Though both deal with the same subject, it would be difficult to find two books so widely different. The former author treats his subject from the functional side (the keynote of the Oxford school), the second from what Professor Moore somewhat disdainfully terms the anatomical side, that is, from the point of view of the structure (chemical structure) of living matter, on which, as he says, textbooks by the score already exist. All who know Professor Moore or his writings will be aware that his thoughts run on original lines, and that he is gifted with the virtue of imagination. Much of what he writes has appeared before, either in the publications of the Royal Society, or in two volumes of *Advances in Physiology*, edited by Dr. Leonard Hill some years ago, one of which is now out of print. These chapters have been brought up to date, and are here collected together for the benefit of honours students. We hope that they will find a wider audience, for although to many of us "biotic energy" is an old friend, it will be new to the younger generation. The theme that runs through the book is that the organism, plant or animal, is a transformer of energy. The original source of energy is the sun, hence the large space devoted to the plant where photo-synthesis is so prominent. Before chlorophyll appeared, certain inorganic colloidal systems were able to capture and transform the energy of sunlight, and when it appeared as "biotic energy" then arose life. Biologists may differ greatly on the "origin of life," but I doubt whether any now would question the author's statement that it is futile to search, as Bastian did, among torulae and amoebae for its earliest appearance. The yeast cell and the pond animalcule may be simple in comparison to a tree or a man, but after all they are highly specialized and elaborate organisms, and no doubt the gulf which separates them from the more primitive forms which were the earliest to appear is wider than that between man and the amoeba. However much we may commend Professor Moore's praiseworthy and skilful attack on this old, but ever new, problem, it is a pity that he veils so much of what is evidently important in mathematical language. My own acquaintance with mathematics is not deep enough to be able to criticize, and I fancy the majority of physiologists and students (even honours students) are in much the same predicament; it is, moreover, always possible to put into plain English most of the facts which to the mathematician are more easily condensed into a formula. The worst of a formula is that it has an air of depth and finality about it, and in these days when "relativity" is in the air, who shall say what finality means? Still, with all that, Professor Moore's book is one which is well worthy of study. It makes one think, and that is not what can be said of many other books.

[1] *Biochemistry: A Study of the Origin, Reactions, and Equilibria of Living Matter.* By Benjamin Moore, M.A., D.Sc., F.R.S., Whitley Professor of Biochemistry, University of Oxford. London: Edward Arnold. 1921. (Demy 8vo, pp. 346. 21s. net.)

[2] *Principles of Biochemistry, for Students of Medicine.* By T. Brailsford Robertson, Professor of Physiology and Biochemistry, University of Adelaide. Philadelphia and New York: Lea and Febiger. 1921. (Med. 8vo, pp. 645. 8.00 dols.)

Professor Robertson's book is most appropriately dedicated to his old teacher, Sir Edward Stirling, whose chair he now fills. Brailsford Robertson is first and foremost a chemist. He never seems to have been through a course of medical training, which is the best school in the making of a biologist. His work bristles with constitutional formulae; physical chemistry, as one would expect from a knowledge of his original work, looms large, and rightly so, in his horizon. He, too, has imagination, and looks forward to a time when science will have conquered death, and when even the workings of the mind will be explicable on chemical lines. His imagination is more unbridled than Moore's, and no doubt time will make him more cautious. Although he is a British subject, and after a stay in American universities has returned to a British Commonwealth, he has not returned to English spelling. There is, however, more to criticize in his book than mere Americanism. He is a bit too ready to swallow statements made by others as a result of imperfect work, and preach them as Gospel. In one place, for example, he describes the vitamins as substances allied to betaine, and on another page as allied to purines; I suppose the evidence is as much in favour of one view as the other, or indeed of any other view which can be advanced without any evidence at all. Why the antiscorbutic substance should be denied the title of vitamin, but admitted to the category of "accessory foodstuffs," as Hopkins terms these unknown principles in a healthy diet, is a mystery. I think Moore's treatment of the vitamins infinitely better. He only alludes to them once, and that in a footnote, where he refers the reader to the pamphlet issued on the subject by the Medical Research Council. It is much better to say to a reader look up the proper authority than to write at large about them in the way Robertson does. He treats the unknown hormones in much the same way; one can forgive him for his lengthy allusions to tethelin, the supposed active principle of the anterior pituitary lobe, because it is his own offspring, but when he states that the hormone of the posterior lobe is allied to ergamine he is again speaking without authority. It will be news to the British Medical Association that it was concerned in the question of protein nomenclature, and if he means the Physiological Society of this country he sadly misquotes what it proposed. His use of the word "amnesia" as equivalent to forgetfulness will be somewhat of a shock to neurologists. His references to authorities are frequently marred by misspellings. Whether his mathematical excursions are correct or not I have, as I said before, not sufficient knowledge to judge; whether his tables of analyses and the like are correct I have not had the patience to ascertain. But judging the work as a whole by those portions I have been able to check, I would warn readers and students to verify statements by consulting either the original papers or some trustworthy textbook.

Professor Robertson has not written an uninteresting book. Some parts of a speculative nature are really stimulating reading, but the whole preparation has been undertaken in too slapdash a manner to make the book one which can be recommended to the student.

W. D. HALLIBURTON.

TOXICOLOGY.

THE new edition of BLYTH'S well known treatise on *Poisons*[3] has been thoroughly revised; much of doubtful utility that found a place in the previous edition has been omitted, while new matter has been introduced. Stress has rightly been laid upon the importance of microchemical and physical methods in the detection of poisons, since the analyst has often to operate on minute amounts of poison he has succeeded in recovering from his analysis of portions of the viscera.

The book will be of use as a book of reference to those engaged in the study and practice of toxicology, but we question whether the style in which it is written will appeal to the student, for the descriptions are diffuse, and the reader will sometimes find it difficult to select those methods which are of practical value at the present day from others which are really of historical interest. For example, three different classifications of poisons are given, and that adopted by the authors seems to us too complicated to be of real value or to be retained in the memory. Throughout the work there is constant reference to the writings of foreign workers, but these are not the most recent, and the most important additions to our knowledge obtained by scientific workers in this country during the past few years seem to have escaped notice. It is rather surprising that there should be no mention of the effects of the poisons used in the preparation of munitions such as trinitrotoluene and the similar substances used for explosive purposes during the war, and about which so much has been published both by medical societies and Government departments. Again, tetrachlorethane, which was the constituent of the dope or varnish used in the manufacture of aeroplanes and which gave rise to a classical form of toxic jaundice is not mentioned. Then, again, under arsenic an account is rightly given of its organic preparations salvarsan and allied substances, but no mention is made of their toxicological effect, which is entirely different from that of inorganic arsenic. This omission is remarkable since during the past five years the medical journals in this country have given very numerous accounts of the toxic effects of the various arseno-benzol compounds, and the Medical Research Council has issued a voluminous report on the subject.

Brief and very useful accounts are given of the various chemical poisons and their compounds from the chemical point of view, but the toxicological aspects are less adequately discussed. The clinical accounts of the effects of poisons do not seem to have been written from personal experience, and it appears doubtful whether the most recent literature has been consulted. Thus, in the case of phosphorus, a long account is given of its poisonous symptoms, but the fact that it causes degeneration and loss of function of the liver, and that all the dangerous symptoms are really the result of an auto-intoxication is not sufficiently brought out. We can find no mention of the use of diachylon (lead plaster) as an abortifacient, though numerous cases of fatal poisoning from this have occurred in recent years in this country, and diachylon has in consequence been placed in Part I of the Poison Schedule.

The methods described for the toxicological analysis of poisons are those which have been described in various papers and books in former years, but sufficient stress is not laid on methods of chief practical value at the present day; indeed, the toxicological analyst would in most cases find great difficulty in selecting from this work the method of analysis which he should apply in any given case.

NOTTER AND FIRTH'S "HYGIENE."

FOR more than a quarter of a century NOTTER and FIRTH'S *Hygiene*[4] has been a popular textbook, and the care taken in revising the ninth edition justifies the high reputation it has held for so long a period. The chapter on food appears to have been revised in accordance with present-day knowledge. The clearly written account of vitamins, though brief, contains perhaps all the information certainly possessed on the subject.

Among the new chapters in this edition is one dealing with child welfare and school hygiene, in which the closing of a school by the school medical officer is referred to as a step which should only be taken after most serious consideration. Trough closets are spoken of as most unsuitable for schools, but a qualified approval is given to their use in factories or groups of artisans' houses. Slop closets, which were first used in Crewe, and later in some Lancashire towns and in Stafford, and the use of which is now very generally condemned, are spoken of approvingly under certain limited conditions. The purification of sewage by means of "activated sludge" is now beyond the experimental stage, and merits a longer reference than eighteen lines, though a general idea of the process can be gathered even from this short account. Having in mind the long military experience of the authors, we might reasonably have expected to find more than five pages devoted to camp sanitation, though it is only fair to state that this is explained by the opening sentence of this section: "In principle, the sanitation of a camp is the

[3] *Poisons: Their Effect and Detection.* By Alexander Wynter Blyth, M.R.C.S., F.I.C., F.C.S., and Meredith Wynter Blyth, B.A.Cantab., B.Sc.Lond., F.I.C., F.C.S. Fifth edition. 1920. London: C. Griffin and Co., Ltd. (Med. 8vo, pp. 779; illustrated. 36s.)

[4] *Hygiene.* By J. Lane Notter and R. H. Firth. Ninth edition. London: Longmans Green and Co. 1921. (Cr. 8vo, pp. 552; 80 figures 10s. 6d.)

same as that which concerns a group of ordinary dwellings; it differs therefrom mainly in the circumstance that its actual practice is essentially the use of simple methods and simple material used in an intelligent way." The chapter on sanitary law has been very carefully revised, and appears to include a reference to all public health legislation up to the end of 1920.

NOTES ON BOOKS.

THE second edition of *The Qualitative Analysis of Medicinal Preparations*,[5] by Mr. H. C. FULLER, an officer of the Institute of Industrial Research, Washington, D.C., sets forth in detail a scheme for the analysis of drug compounds of all kinds. This in its general form appears to have been tested and approved by many workers in the United States since the publication of the first edition some eight years ago. The field covered by the volume is wide and the phraseology for the most part clear, so the volume may be found helpful by those interested in the identification of drug contents in this country, where the use of "proprietaries" from all over the world is rife.

There was certainly room for a *Dictionary of British Scientific Instruments*,[6] such as that now issued by the British Optical Instrument Manufacturers' Association. It supplies a list and definitions of nearly all instruments of precision connected with "knowledge in the making"—to adapt a recent definition of science—as also of most of those employed on board ship, in the great manufactories, and in the laboratories of teaching hospitals, if not in their operating theatres. There are also illustrations of many of the leading types, and a summary of the history of the development of the manufacture of optical glass, of the Royal Observatory, and of some other connected undertakings.

[5] *The Qualitative Analysis of Medical Preparations.* By H. C. Fuller, B.S. Second edition, rewritten. London: Chapman and Hall. 1920. (Crown 8vo, pp. 191. 12s. 6d. net.)

[6] *Dictionary of British Scientific Instruments.* Issued by the British Optical Instrument Manufacturers' Association. London: Constable and Company, Ltd. 1921. (Demy 8vo, pp. 347; 313 figures. 21s.)

AIX-LES-BAINS.

A PARTY of twenty medical men from England recently visited Aix-les-Bains and a number of health resorts in Switzerland, under the guidance of Sir Henry Lunn, M.D.; a second party will follow much the same itinerary during the first fortnight of September. The railway companies at home and abroad have given facilities for these tours, and the first medical visitors were received with warm hospitality by the local medical profession, the municipalities, and the directors of the various bathing establishments and sanatoriums.

Travelling from London by way of Paris, Aix-les-Bains was reached within twenty-four hours, and the greater part of three days was spent there in fine weather. An opportunity was thus given of studying the various methods of treatment at Aix, and of taking in something of the beautiful scenery amidst which it lies. In an article on French watering places in the JOURNAL of July 9th, 1921, p. 49, some allusion was made to the long history—dating from Roman times—of the medicinal waters and climatic treatment at Aix-les-Bains, and to the measures taken by the Académie de Médecine to ensure that the bathing establishments and the general sanitation of this and other leading French health resorts are in every respect of the most modern type. We propose to give here a brief account of the famous Savoy spa and its mineral springs as they appear to-day, and to refer later to the Swiss spas visited by members of the British medical profession during the same tour.

Aix lies in a broad and smiling mountain valley—860 feet above the sea—which slopes down towards the picturesque Lac du Bourget, the largest lake in France. It was a celebrated bathing place under the name of Aquae Gratianae, Aquae Domitianae, or Aquae Allobrogum, in the time of the Romans, the word "Aquae" becoming by an easy conversion "Aix." Many of the old Roman monuments were destroyed in the fifth century A.D. A number of Roman remains are, however, preserved in the town, at the museum and elsewhere, and there still stands in the Place des Bains the stone arch erected in the fourth century A.D. by Lucius Pompeius Campanus in honour of members of his family. Little or nothing is known of the history of Aix during the Dark Ages, but in the eleventh century it passed into the possession of the House of Savoy. The modern history of Aix begins about 1776, when King Victor of Sardinia laid the foundation-stone of the thermal establishment. Other parts were added in 1859 and 1881, and the latest additions to the building were made in 1899. It stands at the foot of the lower slopes of Mont-Revard, towards the east end of the town.

The bathing establishment, which belongs to the French Government, is open throughout the year, but the season proper, when the social amenities of the place are at their height, lasts from April to November. The building consists of three stories, installed with a great variety of balneological apparatus, including the "bouillon," or general vapour bath, and the "Berthollet," or local vapour bath. The distinctive feature of the thermal treatment at Aix-les-Bains is, however, the douche-massage, known throughout the world as the "Aix douche." The method is too familiar to need any description here. According to Daquin, massage was first introduced into Aix by some of the returning members of Napoleon's Egyptian expedition of 1799. Thenceforward simple rubbing, which had been in use at Aix for a century, seems to have been replaced by the more elaborate manipulations and friction of patients under the hot sulphur water; and thus as time went on the douche-massage became the principal item in the Aix programme. In some of the many treatment rooms the hot and cold water pipes are so arranged as to give the "douche Écossaise," or alternating hot and cold douche. As to the origin of the term "Scotch douche," we learn from Dr. H. Forestier that it was coined by Despine, who was appointed Director of the Aix baths in 1787. He had studied under Cullen in the University of Edinburgh, and there learned the use and advantage of cold shower-baths. Despine's grandson records that on his return to Aix his grandfather introduced that mode of treating nervous diseases, and gave it the appellation "douche Écossaise" in memory of the place where he received his medical instruction.

A familiar sight in the streets of Aix is that of two stout porters carrying a sort of sedan chair from the baths to an hotel, the patient, wrapped in a maillot, being screened from cold draughts and inquisitive eyes by curtains. The length of the treatment, of course, varies according to the nature of the case, but in general a course of from twenty-five to thirty days is prescribed, thus allowing for some twenty applications of the douche-massage with intervals of rest. Medical men, it should be added, are treated free of charge.

The thermal water rises from the ground in two springs at a temperature of about 114° F. These are called respectively the "sulphur spring" and (by a misnomer) the "alum spring"; between them they yield about a million gallons a day. The waters are trapped in a grotto on the rising ground behind the baths, and are mainly used for external application. Another spring at 51° F. gives an abundant supply of cold water for the hydrotherapeutic rooms, and for cooling the hot water to 95° F. or thereabouts for the douche-massage. The hot water is clear and has a slightly sulphurous smell, due to a small amount of free H_2S.

In addition to the principal springs there is also the cold sulphur water of Marlioz, which is dispensed at a building, equipped with inhalation and spray rooms, in the midst of a pleasant park on the outskirts of Aix. The water here rises in three springs at 57° F.; the principal salt is sodium sulphate, with a small amount of sodium iodide and a trace of bromine. It is mainly used in the form of sprays and local douches in chronic laryngeal and bronchial catarrhs. Lastly may be mentioned the "Source des Deux Reines," a cold, bright, and feebly mineralized water used solely for drinking purposes, and served to visitors at a kiosk opposite the bathing establishment, whither it is led by pipes from Corbières on the mountain side. Its action, if any, must be diuretic.

As an adjuvant to the ordinary treatment at Aix there is a mechano-therapeutic institute, built in 1899, where exercises are applied by means of Zander's apparatus under the direction of Dr. Guyenot. In the same building is installed a set of Nauheim baths, a full equipment of electro-therapeutic appliances, *x*-ray apparatus, and a laboratory for urine analysis.

amusement and relaxation, which play an important part in what is still ineptly called "the cure," are lavishly provided for at Aix. The two casinos—the Grand Cercle, with its theatre, and the Villa des Fleurs—rival anything of the sort to be found elsewhere, and there is an abundance of good hotels. The scenery of the lake and the prospects from the top of such peaks as Mont-Revard (5,070 feet) and La Chambotte are magnificent. From the former, which is ascended by a cogwheel railway, can be enjoyed an alpine panorama that includes on the clearest days a peep of Mont Blanc. At the summit of La Chambotte and overlooking the whole blue lake there is a little hotel at which are preserved mementoes of Queen Victoria, who was a constant patron of Aix and its neighbourhood.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

EIGHTIETH ANNUAL MEETING.

THE eightieth annual meeting of the Medico-Psychological Association was held in London from July 11th to 15th under the presidency of Dr. C. HUBERT BOND. The presidential address was on "The position of psychological medicine in the medical and allied services," and it was followed by a number of papers and demonstrations, occupying seven sessions. At the business meeting Dr. G. M. Robertson was elected to succeed Dr. Bond in the chair; Sir Henry Carr Maudsley, physician and lecturer to the Melbourne Hospital, was elected a honorary member of the association, and Sir Maurice Craig was chosen to deliver the third Maudsley Lecture.

On the evening of July 13th the Association dined at the Connaught Rooms, when the chief of many distinguished guests were the Lord Chancellor and Sir Alfred Mond, the Minister of Health. In reply to the toast of the Legislature, proposed in fitting terms by Dr. BOND, who reminded the Lord Chancellor that he discharged historical and not entirely nominal functions in relation to the mentally afflicted, Lord BIRKENHEAD said that it was literally true that every communication on this subject addressed to his department was most carefully examined by a competent person. It was far better that a thousand trivial and baseless cases should be carefully examined than that there should be a risk of one in which there was a vestige of substance being overlooked. He suspected that the great majority of our countrymen contemplated legislative activities with anxiety and suspicion, and he himself had always been inclined to measure the merits of any Government by the slimness of those unappetizing volumes which recorded the corpus of the statute law. He took a modest pride in the fact, years ago, when his side was in power, that those volumes were so thin, and that they were much thicker after parties had changed places. But he was bound to admit that during recent years those volumes had grown portentously, and they would have been larger were it not for the pruning function of the assembly in which he himself led an existence not altogether indecorous. He believed that they had too much legislation, though if it were said that during the past three years the Government had passed a large number of complicated measures it could at least be pleaded in extenuation that the Government had since repealed several of them. (Laughter.) He believed further that his right honourable friend, Sir Alfred Mond, was contemplating a considerable jettisoning. He (the Lord Chancellor) had the opportunity of presiding at the birth of proposals, and, from his place in the House of Lords, of having a hand in their extinction, and he added, amid laughter, that a process of that sort made a legislator at once sympathetic and versatile, and gave him a vivid sense of proportion. He owned that he sometimes looked with favour upon the Scots practice whereby an Act of Parliament became non-effective through desuetude. Such a practice gave great power to judges, and it went far to diminish the mischiefs of legislation.

Sir ALFRED MOND, who also replied to the toast, said that the transference of the Board of Control to the charge of the Ministry of Health was a sign of that scientific progress which no longer treated lunacy as some mysterious and obscure malady, but as one which came within the category of medical research and of that enlightened and modern treatment for which the association stood. In order to obtain legislation it was necessary, in the first place, that those who wanted it should know clearly what they wanted. One of the difficulties with which the Minister of Health had to contend was the great diversity among the medical profession. To the scientific mind controversy was the salt of life, but to the lay mind the diversity of expert opinion was the best excuse for doing nothing. The second requisite was that public opinion should be educated, and none were better fitted for that function than the medical profession. Fresh legislation was difficult in the crowded state of our public affairs, but with regard to the peculiar interest of those whom he was addressing, he could say that all proposals would be regarded with a very sympathetic eye and a desire to see all possible progress made.

Sir WILLIAM COLLINS proposed the health of the Navy and Army Medical Services, and referred to the lessons which emerged from the hecatomb of suffering this generation had been called upon to bear. Much had been learned which would lead to the control of disease, and if many old principles had received new extensions, it was probably true also that some knowledge which had been accounted new was found on investigation only to fall in with earlier experience and observation. Surgeon Vice-Admiral Sir ROBERT HILL, replying on behalf of the naval service, said that that service at the moment was suffering from malnutrition, due to the leakage of old blood and the lamentable want of new, but he hoped that with the masses of students now passing through the colleges the naval service would very soon have the additions it needed. Lieut.-General Sir JOHN GOODWIN, who replied for the army, referred to the debt which the army owed to the Board of Control for the loan of hospitals during the war. The first hospital given to the army by the Board of Control was opened in December, 1914, and before long twenty-four hospitals with 31,000 beds were working solely for the army. The civil patients in these hospitals were transferred to the remaining asylums, whose staffs most loyally worked double time. More than half a million army patients were treated in hospitals lent by the Board of Control, and the death rate among these patients was under 1 per cent. In the largest of them—the Lord Derby War Hospital—with 3,300 beds, 8,500 patients were treated in the mental section alone, and of these more than 74 per cent. were absolutely cured. (Applause.)

The BISHOP OF WORCESTER, at the close of a witty speech in responding for the guests, mentioned that the bishops were now entering upon a self-imposed course of psychology in order better to fit themselves for examining candidates for ordination who had been enjoined by an assembly of the Church to make a study of psychology a part of their preparation. Lord Justice ATKIN, who also responded, referred to contests in the Medico-Legal Society over the formula which governed criminal insanity. He agreed that the formula might be amended, but any amendment of it must comply with two conditions: In the first place, there must be a reasonable degree of unanimity of opinion as to the revised formula, and in the second, it should not merely have the effect of transferring all the inhabitants of His Majesty's prisons to the various mental hospitals in the country.

Sir JAMES CRICHTON-BROWNE, who mentioned that sixty years ago his father, then a Commissioner in Lunacy, occupied the chair of the association, also addressed the gathering. He said that there was one mental disorder—the most fatal and deplorable of them all—that they now knew could be prevented by a simple sanitary precaution, and ought to be prevented, let puritanical bigotry say what it might. In a delightful and whimsical speech Sir James pointed out how the advances of science—telephonic communication, for instance, or the discoveries in connexion with the electron—seemed gradually to be making good what were formerly regarded as the delusions of the insane. The wildest vagaries of insanity were now within measurable distance of becoming philosophic truths, while such philosophic speculations as the theory of relativity seemed likely to lead a man who tried to grapple with them into confusional insanity.

The final toast, that of the Medico-Psychological Association itself, was proposed by Sir JOHN BLAND-SUTTON, and responded to by Dr. BOND. Sir John Bland-Sutton said that the more thoroughly psychology—or, to use a simpler term, human nature—was understood, the more successful became the practitioner whether of law or medicine.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE twelfth annual meeting of the Oxford Ophthalmological Congress was held at Oxford on July 6th, 7th, 8th, and 9th last.

A new departure was made this year in an extension of the proceedings to the morning of Saturday, July 9th, for it was felt by the Council that, with the increase in the number of contributions to the programme, insufficient time was available during two days only to enable members to go carefully through the Museums, and in addition to attend the demonstrations and papers. The addition of the extra day proved an unqualified success, and will be adopted at future meetings.

As in former years, the proceedings took place in the Department of Human Anatomy of the University Museum, kindly placed at the disposal of the Congress by Professor Arthur Thomson, professor of human anatomy. The majority of the members enjoyed the hospitality of Keble College, which was again available through the courtesy of the Warden, the Rev. Dr. Kidd. The advantage which accrues from a return to college life, even though for so short a time, is considerable, for opportunity is thus afforded to members for a closer acquaintance with each other than would otherwise obtain, whilst occasion can be and is made for informal discussions on ophthalmology in general. The latter was always aimed at by the founder, the late Robert W. Doyne, and it has ever proved a profitable feature of the Congress.

The attendance was above the average and included representatives from France, Denmark, Holland, and from nearly all British possessions, together with a larger number from the British Isles than usual.

Members met at dinner in the Hall of Keble College on the evening of Wednesday, July 6th, and the proceedings opened at 10 a.m. on the morning of July 7th with a short address of welcome by the Master, Mr. SYDNEY STEPHENSON, immediately followed by a discussion on "The causes of infection after extraction of senile cataract."

Dr. VICTOR MORAX, who came over to open the discussion, pointed out that with present-day knowledge of operating every surgeon should be in a position to avoid all sources of infection which come from himself, his instruments or any liquids which he might use, but that he was not in a position wholly to prevent infection from the conjunctival sac. Such infection might occur at any time from shortly after the operation up to fourteen days later, the more immediate being usually the more severe and often leading to panophthalmitis; the later ones evolved as iritis, iridocyclitis, or the more severe plastic iridocyclitis. The most commonly found micro-organism was the pneumococcus, less frequently the staphylococcus, and rarely the streptococcus, but in the cases of late iridocyclitis it had been difficult to identify a micro-organism though undoubtedly such must exist as a cause. There was still much bacteriological work to be done in this sphere. The importance of a good operation with a clean cut incision, and therefore rapidly healing wound, was emphasized, together with the advantage of the conjunctival flap.

Those who took part in the discussion were Dr. T. HARRISON BUTLER (Leamington Spa), Mr. JOHN HERN (Darlington), Mr. E. H. E. STACK (Bristol), Mr. P. H. ADAMS (Oxford), Mr. BURDON-COOPER (Bath), Mr. RAYNER D. BATTEN (London), Mr. N. C. RIDLEY (Leicester), Major A. E. J. LISTER, I.M.S., and Mr. JOHNSON TAYLOR (Norwich).

At the conclusion the Annual General Meeting was held, when it was reported that sixteen new members had been elected during the past year, making a total membership of over 320, and that the Congress was in a satisfactory position financially. An invitation from an International Congress of Ophthalmology which would take place in America in April next was read, and it was hoped that as many members as could would accept.

In the afternoon details were given by Mr. R. J. E. HANSON of an apparatus which would afford a rapid method of estimating stereoscopic vision, especially in the case of intending candidates for gunnery in the Royal Navy, although also of value in all spheres of work. Mr. ARTHUR GREENE of Norwich described two cases of petrosal sinus sepsis, the source of infection being apparently sties in the lids. Dr. WILLIAM WALLACE showed a beautiful and artistic series in water-colours of fundus conditions from war injuries, a unique collection on which Dr. Wallace as both observer and artist is to be heartily congratulated. Mr. RAYNER D. BATTEN followed with an interesting series of drawings of macular conditions.

On Friday the proceedings recommenced with the Doyne Memorial Lecture, delivered this year by Mr. ERNEST E. MADDOX of Bournemouth, who chose as his subject, Heterophoria, on which he is a world-wide authority. Delivered with logical clearness, the lecture should prove of the utmost value in its practical as well as theoretical aspects. At the conclusion Mr. Maddox paid a fitting tribute to the founder of the Congress, and was then presented with the Doyne Memorial Medal for the year.

Dr. CHARLES RUSS of London described an interesting discovery he had made with regard to the effect produced by the human eye when directed upon a delicate electrostatic system. Several models, which had previously been seen by a number of the leading physicists, were exhibited and demonstrations of the phenomenon given. Mr. JOHN HERN then read a paper on his experiences of "606" and its substitutes in eye diseases.

The afternoon was spent at the Eye Hospital, and was given over to the consideration of chronic glaucoma. Mr. N. C. RIDLEY described his "trench" operation for the relief of tension. Dr. T. HARRISON BUTLER urged the necessity of early diagnosis and operation in the chronic forms of the disease, and described his method of dealing with the acute forms. Dr. P. H. ADAMS (Deputy Master) described an operative procedure which was a combination of the Lagrange and Herbert operations with a modification devised by himself, and showed several successful cases. Mr. B. CRIDLAND commented on some points in the performance of the Lagrange operation. An interesting discussion followed the papers.

On Saturday morning Dr. T. HARRISON BUTLER read a good paper on "Loss of vitreous during cataract extraction," a subject which aroused much interest and free discussion. Mr. PERCIVAL J. HAY showed ophthalmic instruments and apparatus which he had devised, and also some useful coloured test-types. The value of the latter in practice was clearly explained, and the types should prove a useful adjunct in the consulting-room. A paper by Dr. HAMILTON MCILROY, on "Some points in the work of a school oculist," was read *in absentiâ*.

The Scientific and Commercial Museums were open daily. Amongst exhibits in the former were the beautiful series of water-colour drawings illustrating abnormal fundus conditions shown by Dr. WILLIAM WALLACE; a useful operating chair devised by Mr. P. H. ADAMS; together with a number of interesting pathological specimens shown by various members. Demonstrations of reading by the optophone were also given by a blind lady. Ophthalmic instruments, apparatus, and new books, etc., were shown in the Commercial Museum, some thirteen firms contributing stalls.

On Thursday afternoon the Congress held a garden party at Brasenose College, members being welcomed by Mr. R. W. Jeffery, M.A., the historian of the College, and Mrs. Jeffery. A short but extremely interesting address was given by Mr. Jeffery on the history and traditions of the College. The official dinner was held in Keble Hall on Thursday evening, July 7th, and was well attended. The visitors present included the Rev. Dr. Kidd, Warden of Keble College; Sir Archibald Garrod, Regius Professor of Medicine; and the Rev. Canon Matheson.

As a whole the meeting, favoured with fine weather, was one of the most successful yet held.

A COMMITTEE appointed by the Indianapolis Humane Society to investigate alleged cruel treatment of dogs by vivisection at the Indiana University School of Medicine reports, according to the New York *Medical Record*, that on a recent unannounced visit to the school of medicine it was found that the dogs were being humanely treated.

THE Golden Book, a memorial to French medical men killed in the war, has been completed, and will be published in October. It contains a series of articles on the achievements of the French Medical Corps during the war, on the part of the surgeon in battle, on medical men in prisoner-of-war camps, and on similar subjects, followed by a list of over 1,700 medical practitioners who died for their country. The volume is to be illustrated by reproductions of paintings by Barrère and by over sixty photographic plates.

British Medical Journal.

SATURDAY, JULY 23RD, 1921.

THE PRESIDENTIAL ADDRESS.

AT the meeting of the Association in Aberdeen in 1914 there were, as in previous years, in addition to Sir Alexander Ogston's presidential address on "The Making of a Scottish Medical School," in which the growth and development of Aberdeen in its civic as well as its academic aspect were reviewed, two formal addresses—in Medicine and in Surgery respectively. At the special clinical meeting of the Association in London in April, 1919, and at the successful Cambridge meeting last year, the first regular meeting since the outbreak of the world war, the addresses in Medicine and in Surgery were dropped, and this example has been followed at Newcastle. The change certainly prevents overlapping, makes more room for the "popular lecture," or a special address such as that on "Industrial Hygiene" by Sir Thomas Oliver; and has the further advantage of concentrating attention on the presidential address, which both in 1919 and 1920 was delivered by Sir Clifford Allbutt. In the first of these masterly addresses, entitled "The New Birth of Medicine," the Regius Professor considered the principles and operations of modern medicine in the light of the natural sciences, and by their standards measured our progress and forecast our future; in the Cambridge address he discussed "The Universities in Medical Research and Practice." The last three presidential addresses have been professorial and representative of Aberdeen and Cambridge; and now Professor David Drummond, President of the Durham University College of Medicine, who will next year be followed by Sir William Macewen, the Regius Professor of Surgery in the University of Glasgow, has fully maintained this high standard in his address on "The Medical Profession: A Horizon of Hope."

In the first instance Professor Drummond, as will be seen, deals with the future of the medical profession more from the point of view of its efficiency in the State than from an academic and strictly scientific aspect. In discussing the question whether our increased professional ability is accompanied by a corresponding advance in our recognized power in national activity, he gently lays his finger on certain deficiencies that it behoves us to try to correct; of these some are no doubt natural; some inequalities in technical attainments which render the service to the public imperfect depend on differences in educational training. This could be met by improved methods of instruction, but the power of acquiring knowledge is not the only factor needed. The personal character of the student and future practitioner must be borne in mind as a factor responsible for inequalities in our value of services rendered, and the President's epigrammatic remark that "the good doctor is born, the indifferent doctor is made," suggests, though he does not say so, that he had in mind the advisability of some restriction of entry based on psychological tests such as are enforced on intending medical students in some American universities. As medicine is a progressive and constantly changing art, its followers, if they are to continue efficient, must be students all their days, and this raises the important and at this moment extremely urgent problem of graduate education. Of the various forms that this may take, Professor Drummond lays stress mainly on the practitioner's self-education and on the need for verification and checking of his work. Thus, in order to clear up any doubt as to the nature of fatal illness, necropsies should, he urges, now be the rule; this is very far from being the case in present-day practice; indeed, necropsies have become less frequent in recent years than in the past—a state of things by no means confined to this country, as is shown by the remarks of Professor H. A. Christian of Harvard and others interested in the future of American medicine. Such a change cannot but have a retrograde influence, and Professor Drummond traces some delay in the advance of accurate diagnosis to this neglect to obtain data for trustworthy statistics by *post-mortem* examinations; for, as it is, our statistical returns and the deductions made by their analysis are fallacious. Over and beyond this, however, there is much waste of the available statistics, and to remedy this the hospitals should be provided with officials highly trained in statistical methods and able to correlate and systematize the material now rarely utilized.

Emphasis is rightly placed on the supreme importance of cultivating the faculty of observation, so as on the one hand to be able to recognize the earliest departures from health, or the commencement of disease, and on the other to possess a sound acquaintance with physiological variations, and thus to assess correctly the value of abnormalities. In this essential matter Professor Drummond is obviously at one with Sir James Mackenzie's well known views. Lastly, the President's long experience as a teacher and examiner enables him to speak with authority on the question of the examination test; many have regarded it as a necessary evil, and attempts have been made to minimize the drawbacks, which are perhaps most noticeable in the case of the ablest students; thus the factor of competition has been cut down by making examinations "pass" rather than "class." There is another change, among the advocates of which Professor Drummond has long been numbered: namely, that the results of an examination should not be determined solely by what the candidate does during the brief period of that trying ordeal, but that credit should be given for previous class and ward work as reported on by his teachers; the recommendation to this effect recently made by the General Medical Council naturally meets with his warm support.

INDUSTRIAL HYGIENE.

IN his address on Industrial Hygiene Sir Thomas Oliver reviews an important branch of preventive medicine, in which, thanks to the labours of a small but indefatigable band of investigators, amongst whom the lecturer himself holds an honourable place, great successes have been achieved in the last two generations. The most complete victory over industrial disease is that won in the lucifer match industry, and Sir Thomas Oliver can justly claim that "the whole industry has become transformed from a dangerous to a harmless trade." Less dramatic and less exclusively a medical triumph, but, in view of the vastly greater number of persons affected, much more important, has been the reduction effected in the death rate of miners. In 1851 the fatal-accident rate was 4.5 per 1,000, in 1912 the death rate was 1.37 per 1,000.

The statistics of industrial lead poisoning—a subject which has been greatly elucidated by the work of Dr. T. M. Legge, Sir Kenneth Goadby, and Sir Thomas Oliver—show a decreasing incidence, although not, unfortunately, an equally decreasing mortality. There is, however, a general tendency towards diminution of deaths.

Sir Thomas Oliver very rightly calls attention to the fact that research in industrial hygiene has been extended, that not only certain special diseases of occupations, but also the general reactions of the physiological and psychological machine to industrial life are now taken into consideration, and he properly commends such researches as those of Dr. H. M. Vernon. Industrial hygiene, in the true sense of the term, includes the study of both factory conditions and home conditions. Our mid-Victorian predecessors gave priority to the latter; we now strive to deal with both. We must indeed always bear in mind that both are important. It is often extremely difficult to determine whether a deterioration of health associated with industrial employment is directly or only indirectly due to that employment. An instructive case has occurred in Sweden. Although Sweden enjoys a far lower infant mortality and an appreciably lower mortality at ages over 35 than we do, her mortality in adolescent ages is much higher and has not shared in the general improvement which has characterized other groups; in fact at ages 15 to 20, Swedish mortality was about at its minimum sixty years ago. In the opinion of the late Professor Sundbärg, this stagnation or even deterioration was a consequence of the rise of Swedish industry. "Formerly," he wrote, "the adolescent boy and girl remained at home for a longer time. Nowadays one goes more frequently and at an earlier age to the city or the factory. The new conditions of existence bring in many cases increased dangers to health and life, dangers which, especially in the case of women, often lead to tuberculosis" (*Statistisk Tidskrift*, 1909, 206). We may remark that in the five years 1911–15, the male death rate from pulmonary tuberculosis in Sweden at ages 15 to 20 was never less than 1.5 per 1,000, the female rate never less than 2.1. For the decennium 1901–1910 in England and Wales, the rates were 0.8 and 1.0. Assuming that Professor Sundbärg's opinion is correct, we need to know whether opportunities of direct infection in factories or the unsatisfactory housing conditions of the Swedish working classes are the more to blame. In this country a similar problem has to be solved.

There is the more need to emphasize the duality of the problem because in the near future the task of securing good conditions in the factory is bound to be easier than that of obtaining tolerable conditions in the home. This is an age of "big business"; the war has left us a shortage of dwellings, but it has provided factory accommodation in various centres which leaves little ground for complaint and should allow of the enforcement of the wisest hygienic rules. But it would be rather optimistic to believe that ten hours in a factory under the most favourable conditions will enable a man or woman to struggle with success against such a home environment as, for instance, that noted by Dr. Robertson in his report of 1918. Dr. Robertson pointed out that in the five central districts of the County Borough of Birmingham from 51 to 78 per cent. of the houses were "back-to-back," and that the general death rate ranged from 19.3 to 22.8 per 1,000 (1914–18), being below 10.9 in eleven outer districts where at the most 8 per cent. of the houses were back-to-back. Dr. Robertson further remarked that "it is impossible to imagine a rising generation of young people being able to improve in health or self-respect, even if the best of educational facilities are provided, when everything they come into contact with is sullied by dirtiness and squalor."[1] Dr. Wanklyn used very similar language of parts of London even before the war, and it does not, either in purport or in literal truth, differ much from that of Sir John Simon seventy years ago.

It is, we fear, inevitable that the housing of the working classes, bad as it may be, will deteriorate fairly rapidly during the next few years. What the effect upon the public health will be cannot be foretold; it is as idle to prophesy devastating epidemics as to pretend that the outlook is favourable. The duty of the medical profession, when deprived of perhaps its most efficient weapons in the struggle against disease, is not, however, to give up the fight and join the band of prophets who prophesy evil, but to make use of what weapons are left. We are likely to have not worse but better opportunities of improving factory conditions than before, and these must be used; indeed, the very fact that the workman is likely to encounter in his home more abundant opportunities of infection is a stimulus for us to seek to remedy extra-domestic conditions which lower his resisting powers.

Sir Thomas Oliver points out that the determination of appropriate hours of labour in different industries and a study of the psychological conditions of labour are well worthy the attention of the hygienist; the "welfare" movement which he commends, correlated with the scientific inquiries now under the immediate direction of the Medical Research Council, will provide means for learning much truth about a subject respecting which we have yet mastered very little truth. At the end of a day's work we are all of us sometimes happily tired, sometimes in that condition of unhappy weariness which current slang rather effectively terms being "fed up." Is there any correlation between being "fed up" and liability to take a current infection? Is one "fed up" because one is ill, or does one become ill because one is "fed up"? What are the effects of different systems of ventilation, of different degrees of noise, or of different types of work upon this noxious form of fatigue? Here are but a few of the problems upon which clinician, physiologist, psychologist, and statistician can and must collaborate. It is the business of the physiologist and psychologist to imagine and apply experimental methods, of the clinician to assess the physical conditions of those tested, and of the statistician to analyse the numerical data collected. We would call attention to the remarkable letter of "General Practitioner" in our last issue, the purport of which is that freedom from occupational strain—even when purchased at the enormous cost, both moral and economic, of a strike—has greatly improved the general health of the workers. If this correspondent's observations are both accurate and typical, it clearly follows that the normal organization, even of the coal-mining industry, is hygienically inefficient, and the four questions he asks must be answered.

We have to explore all the myriad influences of industrial life upon the general health of the workman or workwoman, and, as Sir Thomas Oliver says, "in the ever-enlarging sphere of industrial enterprise, to which the various sciences are contributing, and the needs of the world are calling for, lies the opportunity of industrial hygiene."

[1] Report of the Medical Officer of Health for the City of Birmingham, 1918.

ANNUAL MEETING NOTES.

GENERAL ARRANGEMENTS AT NEWCASTLE.

ALTHOUGH the social and scientific sides of the Annual Meeting at Newcastle-upon-Tyne are scarcely yet in full swing at the time these lines are written, it is already safe to pronounce the meeting a great success. An immense amount of preliminary spade work had been done by those who represent the hosts of the Association on this occasion—namely, the new President, Professor David Drummond, his chief of staff, Mr. R. J. Willan, and the chairmen and secretaries of the various local committees. No pains have been spared by them to offer a hearty welcome to their visitors, and to make provision alike for the medico-political business of the Representative Body and the work of the scientific Sections, as well as to draw up an attractive programme of social entertainments and excursions. One great advantage of Newcastle as a centre for a gathering of this kind is the concentration of its principal buildings. The Royal Victoria Infirmary and the adjoining War Pensions Hospital, in which buildings most of the demonstrations in the scientific Sections take place, are immediately opposite the west front of Armstrong College. In the large King's Hall of Armstrong College have been held the sessions of the Representative Body, the Annual General Meeting with the President's Address, the Secretaries' Conference, and Sir Thomas Oliver's Address on Industrial Hygiene; it is also set apart for the dance on Thursday and Sir Arthur Keith's Popular Lecture on Friday evening. The various scientific Sections are holding their discussions in the lecture rooms and theatres of Armstrong College and of the College of Medicine in Northumberland Road. The two buildings are only a short walk from each other, and on the route between them stand the Grand Assembly Rooms, known throughout the period of the meeting as the "Assembly Rooms Club." Here are held the President's reception, the Annual Dinner, and the reception and dance given by the proprietors of the *Newcastle Chronicle*. Here also the Representatives dined together at the close of last week and were given an excellent concert, the chief features of which were the wonderful sword dances in the traditional Northumbrian manner by the Westerhope team of young miners, and the airs played on the Northumbrian or small pipes by two members of the Clough family, father and son, both coalminers. The Reception Room is placed in the Examination Hall of the College of Medicine, and every convenience that forethought could devise has there been provided for members and their friends. Near at hand, in St. Mary's Place, is St. George's Drill Hall, in which has been arranged the Annual Exhibition of instruments, foods, drugs, etc. The reception given by the North of England Branch Council was held on Wednesday evening in the Hancock Natural History Museum, just to the north of Barras Bridge, and therefore but the shortest of walks from the other principal buildings. Equally close are the premises of the Durham University Union Society in Eldon Street, which have been lent to the Association as a ladies' club. Such compactness in a city of the size of Newcastle is remarkable. It has proved a great convenience to all those attending the Annual Meeting, and in a special degree to those with official duties of one kind or another. As a means of learning something about the place, its history, institutions, industries, and neighbourhood, the *Guide Book* issued by the Printing and Publishing Committee has been much appreciated. The historical section of this little book is the work of Mr. John Oxberry, and a dozen woodcuts by Bewick, used as tailpieces, give the volume a peculiar charm.

THE REPRESENTATIVE MEETING.

THE Representatives, when they assembled on the morning of Friday, July 15th, found everything ready for them in the King's Hall of Armstrong College, and the arrangements for the business of the meeting working with smooth precision. It was stated by the Chairman that the numbers present exceeded those at any meeting of the Representative Body since the troublous times during the passage of the National Insurance Bill. In the SUPPLEMENT this week will be found a full report of the first two and a half days' proceedings of the Representative Body. We expect to complete the detailed report in our next issue. A short record of the speeches at the Representatives' Dinner, which proved a most enjoyable event, appears also in this week's SUPPLEMENT. The spontaneous warmth of the welcome given on that occasion and on the following day to Dr. Todd, the spokesman of the Australian Branches, will, we know, remain in his memory, and be reported by him to our colleagues overseas when he returns to Australia from his mission in this country.

The Representative Meeting began the consideration of that section of the annual report of the Council which dealt with Hospitals, and the Appendix on the future of Poor Law infirmaries, after the adjournment for luncheon on Monday, July 18th. The discussion, which was not concluded when the meeting adjourned at 6.30 p.m. on that day, occupied the whole of Tuesday morning, and was resumed after the first part of the Annual General Meeting, when the retiring President, Sir Clifford Allbutt, inducted his successor, Professor David Drummond of Newcastle. The recommendations contained in the report of Council (SUPPLEMENT, April 30th, p. 133) were in the main adopted. The first was adopted almost without discussion. It recorded the belief of the Representative Body that the voluntary method of administration of the voluntary hospitals of the country is to the advantage of the public, medical science, and the medical profession, and should be maintained.

Considerable discussion took place on the second recommendation, which was "that necessitous persons shall continue to be treated free." Difficulty was felt with regard to the word "necessitous," which, it was pointed out, has a special technical meaning when used in reference to Poor Law administration. It was suggested that the recommendation should run: "That such treatment should not be given gratuitously to patients who are maintained in whole or in part by public funds." Eventually, however, the following form of words was preferred: "That inability to pay for adequate treatment shall be the consideration for the admission of all patients to hospital treatment." The recommendation of the Council "that it is undesirable for the voluntary hospitals to be subsidized by the local rating authorities, except in so far as payment is made for the examination and care of patients for whom those authorities are responsible," was adopted after a good deal of discussion. A further recommendation, which was approved, was that every patient of a voluntary hospital able to make a contribution during treatment towards the cost of maintenence should do so unless the contributory method of subscription is adopted as essential in industrial areas. The debate on hospitals terminated about 3 o'clock on the afternoon of Tuesday, July 19th. The Representative Body completed the remainder of its business at 4.30 p.m. Before separating, it adopted by acclamation a vote of thanks to Dr. Garstang, the retiring Chairman.

THE LORD MAYOR'S DINNER.

ON Monday evening, July 18th, the Lord Mayor of Newcastle (Councillor T. W. Rowe) entertained at dinner at the Mansion House a number of members of the executive of the Association, when they had an opportunity of meeting the Deputy Mayor and Sheriff and other members of the Corporation, some leading citizens of Newcastle, and many members of the profession residing in that city and neighbourhood. Among those present was Sir Theodore Morison, Principal of Armstrong College, who

has shown his interest in the annual meeting by readily placing at the disposal of the Association the classrooms, laboratories and theatres of that fine institution, as well as the King's Hall, where the Representative Meeting met, and where the President delivered his address.

After the toast of the King had been duly honoured, the Lord Mayor proposed the British Medical Association. Among the many associations that have visited Newcastle during the year, none, he said, occupy a more important place than the British Medical Association. The members of the medical profession were indispensable to the well-being of the community, and as a municipal worker he greeted his guests as colleagues and friends. The high ideals of the profession and the deep personal interest in their patients displayed by its members made every patient feel that the doctor was his friend. In the war the medical profession had risen magnificently to the occasion, and it was, perhaps, through the medical profession that the world would reap the greatest blessings accruing from victory. Medical science had taken advantage of the distressing circumstances of the war to obtain knowledge beneficial to the nation so that the sufferings of the present and future might be lessened. Medical men had served heroically in the war, and many had given their lives, but it was not only in war that medical men risked their lives—many fell martyrs to their work in civil life. Doctors strove for what was best for humanity, and he hoped that their work would be strengthened and enlarged by the discussions during the meeting at Newcastle.

Sir Clifford Allbutt, who replied, said that the length of his term of office was unique in the history of the Association, owing not to his own merits but to the circumstances of the time. Professor Drummond had told him that this was the third time the Association had held its annual meeting in Newcastle, and that the first meeting in 1870 was the first occasion on which the Association was received in a formal way by the Mayor of the city in which it was meeting. Since then the Association had gone on growing in strength, and was now a power and influence in the country; there might even be a danger that it was getting too strong and self-confident, but that was a risk its members were willing to take. The medical profession was one in which many members, thinking for themselves, went their own way, uninfluenced by others. Though this attitude of mind had its merits it kept a certain minority out of the orbit of the Association; that minority, however, was growing less and less, and even those who were not members of it were beginning to realize that it was as well to keep in with the organization. Medical men lived often isolated lives, and were apt to get a little angular and over-individualistic; the Association was doing much to bring them together and to induce them to work in co-operation. Recent statistical reports showed a surprising fall in infant mortality and a remarkable increase in the survival rate of children, and also, in spite of all the gibes that had been directed against sanatoriums, a fall of something like 15 per cent. in the tuberculosis rate. Although the effort had been as imperfect as efforts on a large scale must be, the incidence of that awful plague had been substantially diminished. With the establishment of tuberculosis colonies he hoped and believed that there would be another large fall in the course of the next ten years.

Professor Drummond, who also responded, recalled how, at an earlier stage of the Association's existence, he had been a member of its Council, along with the late Sir George Hare Philipson and the late Mr. Williamson. He was immensely impressed with the way in which the Association transacted its business now as compared with what happened in those earlier days. He recalled the prolonged efforts of the Association which, after forty-nine years, resulted in the Medical Reform Act, by which the profession obtained direct representation on the General Medical Council. Dr. R. A. Bolam (Chairman of Council) thanked the Lord Mayor for the cordial welcome he had given to the Association and for his genial hospitality. The Lord Mayor, in a brief reply, reiterated his good wishes for the success of the meeting.

LOCAL ORGANIZATION.

WE have remarked in previous years on the success attained in organizing Annual Meetings of the Association by medical men who, for the most part, have had no previous training in work of the kind, and who in the months preceding the event have been fully occupied with the cares of private practice or other professional duties. The work in preparation for an annual meeting is arduous and exacting, and the climax is reached during the early part of the week itself. The experience of previous years is, of course, available through the headquarters staff of the Association, but each town presents difficulties of its own, and the way in which they are met and overcome on every occasion says much for the energy and goodwill of the local workers. In Newcastle the division of labour has followed fairly closely the lines laid down in past years. A large General Committee appointed a smaller General Executive Committee, of whom six acted as local members of the Arrangements Committee sitting in London. The executive work is divided among nine smaller committees with special duties, their plans being co-ordinated by the presence on each of the President, Dr. David Drummond, and the local general secretary, Mr. R. J. Willan, as *ex officio* members. The entertainment of lady visitors has been organized along parallel lines. A Ladies' General Committee, with Mrs. Drummond as president, Mrs. Bolam as chairman, and Dr. Mabel Campbell as honorary secretary, appointed a Ladies' Executive Committee and seven smaller committees with specialized functions. Mrs. Bolam and Miss Campbell have served *ex officio* on each of these as liaison officers, while Dr. Drummond and Mr. Willan linked up the work of the Ladies' Executive Committee with that of the local administration as a whole.

THE TEMPERANCE CAMPAIGN.

DURING the past half-century a breakfast organized by advocates of total abstinence has been a regular feature of the Annual Meetings of the British Medical Association, and members found an invitation to one awaiting them at Newcastle. The National Temperance League Breakfast this year took place on Thursday morning in the Grand Assembly Rooms, with the President, Professor David Drummond, in the chair, and later we hope to give a note of Sir Alfred Pearce Gould's address and of some of the speeches delivered when the meal was over. The medical temperance campaign had, however, already begun in Newcastle on the Sunday intervening between the opening of the Representative Meeting and the confluence of ordinary members to Newcastle. In the words of the local press on Monday, "Several well-known medical gentlemen who are visiting Newcastle in connexion with the annual meetings of the British Medical Association filled speaking engagements at local brotherhoods and churches yesterday. Generally their remarks bore on the temperance question." Thus Dr. E. Rowland Fothergill, Chairman of the Medico-Sociological Committee, at the invitation of members of the West End Brotherhood, gave an address on "Alcohol as a beverage in relation to present social problems." Dr. Mary Sturge of Birmingham addressed a meeting on Sunday afternoon, at the P.S.A. gathering in the Central Hall, Newcastle, where she urged the importance of total abstinence among men and women who contemplated parenthood. Dr. Horace Rose of Wendover spoke at the Byker Brotherhood on "Alcohol in general practice." Dr. F. C. Coley of Newcastle addressed the Felling Brotherhood on the topic of "Delusions about drink." Dr. W. L. Reid of Glasgow gave an address to the Bensham Brotherhood on "What

doctors believe about drink." Mr. McAdam Eccles addressed two meetings on facts concerning alcohol, one in the morning at the Friends' School, Pilgrim Street, and the other at the Brunswick Chapel; on the first occasion he was supported by Dr. Francis Rutter of Mere, Wilts. At the meeting of the Willingdon Quay Brotherhood in the United Methodist Church Dr. George Morgan of Brighton gave a discourse on "Alcohol and the child." Lastly, the Rev. Courtenay Weekes, M.R.C.S., delivered an address on "Alcohol and national efficiency," at St. Nicholas Cathedral.

THE ANNUAL EXHIBITION.

THE Exhibition of surgical instruments, drugs, foods, etc., was held in St. George's Drill Hall, St. Mary's Place, Newcastle, from Tuesday to Friday, and was formally opened on the first day by the President of the Association, Professor David Drummond. There was an excellent attendance of members. Professor Drummond made a tour of the Exhibition with some of the members of the local committee. He then addressed the exhibitors, who received him with hearty applause. He welcomed them, he said, in the name of the great Association of which he had the honour of being President, and also in the name of the Lord Mayor of Newcastle. He warmly congratulated them upon the high merit of their exhibits, which had greatly impressed him, and he wished them much success in all their endeavours. He hoped that the Exhibition would receive the attention and appreciation from the visiting members that it deserved. The President then, amidst applause, declared the Exhibition open. A review of the eighty stands which the Exhibition comprised will appear in a later issue.

THE Scottish Committee of the British Medical Association, on the invitation of the Secretary for Scotland, has nominated to be a member of the Voluntary Hospitals Commission Dr. R. C. Buist, gynaecologist to Dundee Royal Infirmary. This completes the committee. The names of the other members were published last week (page 81).

PUBLIC HEALTH IN 1920.

THE Annual Report for 1920 of the Chief Medical Officer of the Ministry of Health was published at the end of last week.[1] It is entitled, *On the State of the Public Health*, and is less than half the length of the document issued last year, when it was deemed desirable to describe in some detail the machinery of the new Ministry and its working. In his introduction Sir George Newman discusses the purpose of preventive medicine and the part played by the Ministry of Health in supervising and correlating the operations of State medicine as they are initiated by Parliament. "I recognize to the full," he says, "the imperative necessity of national economy, but I submit that suitable and sufficient medical staffing of the Public Health Service, centrally and locally, here by whole-time medical officers and there by part-time medical practitioners, is true economy, for without that we could only anticipate wasteful expenditure and disaster. If the nation desires to secure a high measure of public health it is obvious that we must pay for it. For public health is purchaseable. It is equally obvious that the control of that expenditure is, and should be, in the hands of Parliament and the local authorities representing the will of the people." In the pages that follow an account is given of the state of public health in England and Wales during 1920, as revealed by official statistics and by the work and records of the Ministry. A notable feature is the decline in infant mortality to 80 per 1,000 births in 1920 and to 90 per 1,000 births for the quinquennial period 1916 to 1920; this represents an immense saving in life. There is, however, still room for further reduction before a reasonable standard has been reached, more especially as regards the very high death rate under four weeks and the mortality among the illegitimately born. The closely related mortality among women in childbirth still remains high, and has shown little or no improvement since 1894. The chief characteristics of 1920 in respect of infectious diseases were the decline of influenza and the excessive number of cases of diphtheria and scarlet fever, which together accounted for nearly 189,000 patients, and upwards of 7,000 deaths. In considering public health as a whole, it is noted that cases of epidemic and infectious disease exceed half a million per annum, and though the primary burden is relatively light the ultimate results are grave. If tuberculosis be excluded, notifiable infectious diseases are, however, responsible for not more than about 10 per cent. of the mortality. The chief burden of disease and disablement is provided by general sickness, invalidity and physical impairment. Much of this great mass of disease is directly or indirectly infective in origin, though it is not included in the records of infectious disease. "It is largely unmeasured and unregistered, and yet it is the principal cause of physical inefficiency. Much of it lays the foundation of mortal disease, much of it is preventable; and all of it constitutes a part, perhaps the main part, of the health problem of the nation." The expenditure on sickness and disablement benefits shows that 270,000 years are lost per annum among the insured population alone; there is also to be considered the labour and expense imposed upon others during the 14,000,000 weeks of their incapacitation. Thus, while here and there great gains have been made in the health of the nation, and the death rate as a whole has declined, there remain certain sections of the death rate, both as regards age and cause, which are exceptionally high, and a serious amount of preventable sickness and avoidable disablement, the tendency of which must be to undermine the physical stamina of the people, reducing their capacity and shortening their days. Passing from general considerations such as these, the report takes up in turn the chief branches of work undertaken by the Ministry of Health under the following main headings: Maternity and Child Welfare; the Insurance Medical Service; General Epidemiology; Infectious Diseases Introduced from Abroad; Tuberculosis; Venereal Disease; The Relation of Food to Health and Disease; Medical and Sanitary Administration; Medical Intelligence, Investigation and International Health. In a later issue we shall discuss some of the findings and opinions presented in these sections. The chapter on the Insurance Medical Service will, without doubt, be studied in many quarters with close and critical attention. It may be noted here that Sir George Newman regards the British scheme of national insurance as a *via media* that retains and secures the peculiar individual genius of English medicine, and provides the medical practitioner with an opportunity of public service, instead of excluding him on the one hand, or creating a practitioner service of whole-time medical officers on the other. Summing up the situation at the end of his report, Sir George Newman finds cause for encouragement in the steady advance in the public health service that has taken place since 1918, and the substantial recovery since the war. He warns the general reader that in the practice of preventive medicine quick returns cannot be had, and he summons local authorities to practise what he calls intensive culture and internal development. "It is not the Ministry of Health, but the local authority, in whose hands rests the main business of the execution of a national health policy."

[1] Cmd. 1397. To be purchased through any bookseller or directly from H.M. Stationery Office. (Pp. 180. Price 1s. 6d. net.)

THE RISK OF EPIDEMIC DIARRHOEA.

THE Ministry of Health has issued a pamphlet[1] pointing out the importance of the practical measures which local authorities should take for the prevention of epidemic

[1] Circular 217. 1921. London: H.M. Stationery Office. Price ½d.

diarrhoea in the summer months. Of recent years the number of deaths due to this cause in England and Wales has been considerably reduced, and this has been an important factor in lessening the infant mortality rate. While in 1911 there were 36 deaths per 1,000 births from diarrhoeal diseases, with a total infant mortality rate of 130 per 1,000, in 1919 the rate for diarrhoea was only 9 per 1,000, with an infant mortality rate of 89. A hot summer and autumn, however, may check the satisfaction naturally felt on comparing these figures, as such seasons may cause a sudden and serious rise in the death rate. Preparations should therefore be made for dealing with any possible epidemic of diarrhoea. The mortality from this disease is almost entirely confined to children under the age of five years, and cleanliness of the home is perhaps the most important factor in determining its occurrence; so that not only is it most important for local authorities to insist so far as possible upon domestic cleanliness, but they must also secure that all accumulations of dust, refuse, or filth about dwelling houses are removed at short intervals. In this way the breeding of flies should largely be prevented and practical measures should also be undertaken for their destruction in order to prevent their polluting food and drink. If an epidemic of diarrhoea be seriously threatened in any district the local authority may have to suspend for a time the usual organization for health visiting, and to employ the staff of medical officers, health visitors, and child welfare nurses, in preventing the spread of the infection and in the nursing of sick infants. The attention of the public should be called to methods of preserving and storing milk and other food, to the detection of early symptoms of the disease, and to the importance of securing immediate medical advice. Medical practitioners, it is suggested, should be invited to notify any serious cases in order that nursing assistance may be provided immediately, at the child's home if necessary, while the child welfare nurses should also instruct mothers in the methods of carrying out the treatment advised by the family practitioners. Hospital accommodation, it is recommended, should be obtained as far as practicable for children who are seriously ill, either in special wards in isolation hospitals or in hospitals for sick children, or, if necessary, temporarily in other hospital institutions.

THE RED CROSS REPORT.

THE general report of the British Red Cross Society and the Order of St. John of Jerusalem in England on the work which was so successfully carried out during the great war has just been published by H.M. Stationery Office and will be more fully dealt with in a later issue. The report, which extends to over 800 pages, goes into details of all the different branches of Red Cross work at home and abroad, and contains many interesting notes and lessons for future use in regard to the relationship of such voluntary societies with the War Office and the Government. The total expenditure by the joint committee of the societies amounted to just over £20,000,000. The report, which is the work of many hands, has been edited by Mr. J. Danvers Power, and the price is 12s. 6d. net.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Evidence of Medical Men in Courts of Law.

LORD DAWSON OF PENN has given notice to call attention in the House of Lords, on July 27th, to recent rulings as to the privilege of medical men with regard to evidence in courts of justice, and to move that the matter be referred to a Select Committee of the two Houses of Parliament.

Industrial Fatigue Research.

Mr. J. Davison asked, on July 13th, whether the Government had reached any decision for continued Treasury support for the Industrial Fatigue Research Board; and whether, in view of the importance of the work in its bearings on industrial efficiency, the Minister of Health would press for the maintenance and expansion of the Government's financial assistance. Sir A. Mond replied that the future position of the Board could not be settled pending consideration of the financial requirements of departments in the next financial year.

Colonial Medical Service.

In Committee of Supply on the Colonial Office vote, on July 14th, Mr. E. Wood (Under Secretary for the Colonies) said as regards many parts of the Colonies it was impossible to feel satisfied with the health conditions of to-day. He expressed the thanks of the Government to a committee presided over by Lord Chalmers, which had recently reported as to how best to link more closely the problems of research in the Colonies with universities and other allied institutions in our own country. He was glad to think that more and more the forces in different parts of the world were being mobilized in the pursuit of disease.

The London and Liverpool Schools of Tropical Medicine in one way and another were doing work in the West Indies and in West Africa. In Ceylon there was an active pursuit of malaria. In Mauritius a sum of 10 million rupees had been set aside for similar purposes, and they had been fortunate in enlisting the services of one of our greatest medical scientists, Dr. Andrew Balfour, to advise as to how best the money might be applied. It was with the keenest pleasure that a few weeks ago the Colonial Office was able to welcome the representatives of the International Health Board of the Rockefeller Foundation, who came over from the United States to confer as to the possibility of closer co-operation in their valuable work. And he had every hope that extremely important results would emerge. In this connexion he wished to impress on the Committee the importance of medical personnel. They were confronted with it whenever they began to tackle the problems of research or of its application. In this matter the department had had the advantage of another strong committee presided over by a very distinguished administrator, Sir Walter Egerton. Some of the recommendations made by these gentlemen had already been adopted, and it was hoped as time went on to adopt others. The unification of a Colonial Medical Service presented difficulties. In all these questions of administration the Colonial Office was dealing with forty or fifty different Governments in an infinite variety of conditions and with great differences in their financial resources, and in these days in nearly all reforms the depth and length of the purse was the deciding factor.

Sir Samuel Hoare agreed with Mr. Wood that medical administration was the most important service of any in the tropics. If inquiry were made into medical administration in the West Indies, and it was compared with what the Americans had done in Panama, or with what they had done in a lesser degree in countries like Guatemala, he was afraid it would be found that British medical administration had lagged behind the medical administration of our neighbours. That was the kind of question that a High Commissioner could consider on the spot, and he wished that we could have such appointments of big men with influence in London, who could make frequent visits to Downing Street to present Colonial demands. He believed further they would never get effective administration in the smaller and poorer dependencies unless there were a single-graded Colonial service.

Dr. F. E. Fremantle said it was essential for the Government to see that our Colonial Medical Service and the medical services throughout the Empire were far more efficiently managed than at the present time. Officers joined the Colonial Civil Service on the understanding that medical attendance would be provided, and then they found themselves after many years of service 50 or 100, or 200 or even 300 miles in the bush away from a medical officer, not because a medical officer could not be provided but because, at the present time, the deficiency was not being made good. At present there were stations in West Africa with half a dozen European families and no doctor within eighty miles. Owing to the road conditions it would take him four hours to reach these families. Over and over again in a similar case he had been unable to go because he had had to attend to cases at his own station. The matter had now been taken up by the Colonial Office and he had been supplied by the Under Secretary with a return as to the deficiencies. It dealt with all the different services, and showed 114 vacancies on a strength of about 600. On the West African Medical Staff the total strength was 152, and on that there was a deficiency of 68. That was brought up to June 1st or July 1st, and it did not include 15 natives not attached to the medical staff; four dentists were also excluded. But that was a serious shortage, and was not only true of West and East Africa, but there were worse complaints as to some of the smaller colonies. The Under Secretary had indicated that the difficulty was that these colonies had to pay their way. In many cases the promise of private practice was held out to the medical officer, when he was offered three or four hundred a year to do special Government duty. That was a misleading and ineffective arrangement, because if there was any private practice the medical officer gave it as much time as possible and gave as little as possible to his Government duties.

The system had worked out very badly in certain colonies from which he had special reports. In many cases there was no real private practice, and men who had accepted appointments from the Government under the impression that there was, had felt themselves to have been misled, and had returned home. The Departmental Committee reported on Colonial Medical Services as far back as July of last year, and the latest official statement was that some of the recommendations had been granted and others might be granted. It was a vague reply, and he desired a little more definite assurance. He knew that a medical man could not be supplied for each resident European. The pay in the West African Medical Service had been improved, but it was glaringly insufficient; it was not enough to provide a proper medical service at the present time. Moreover, if all these different services were to be self-supporting there was a very definite reason for treating this matter as an Imperial service, supported by Imperial contributions. For services of defence Imperial natives were equally available to all Imperial colonies, and he saw no reason why the colonies should equally contribute towards medical service. Why should they not get exactly the same grant for colonies in all parts of the Empire, seeing that they were kept together by virtue of the navy, and were only useful as of the Empire if they had a proper medical service? He maintained that there was good reason for having contributions from those colonies which could not afford to maintain a medical service of their own. Thus a proper service might be built up under the Government for the whole of the colonies. Those engaged in it should have a good initial salary and a proper chance to get work. They should be entitled to pensions and gratuities, together with free passages for their families, such should be insisted upon as minimum requirements for these very useful agents of the British Empire. The Departmental Committee had again pressed for some consideration to be given to the possibility of a United Government Medical Service. He believed that would effect an enormous saving. Now one service was competing against another, and they had no Colonial Medical Service which could be said to be united. With some kind of guarantee good men would be attracted.

Mr. Churchill, in the course of his reply, said he agreed with the Under Secretary that great as had been progress during the last twenty years, only a beginning had been made in the assertion and establishment of the mastery of science over the jungle of diseases. Mr. Churchill afterwards dealt with general considerations affecting economies, and also with the situation in Mesopotamia, which had been discussed at great length.

Criminal Law Amendment Bill.

The second reading of this measure, which has already passed through the House of Lords, was moved in the Commons on July 15th by Dr. A. C. Farquharson, who expressed gratitude to the Government for the facilities afforded for its progress.

Clause 1 of the bill would lay down that consent of young persons under 16 years of age shall be no defence to a charge of indecent assault. Clause 2 would declare that reasonable cause to believe that a girl is over 16 shall be no defence to a charge under Section 5 or 6 of the Criminal Law Amendment Act, 1885, and that the limit of time for proceedings under that Act shall be extended to twelve months after the commission of the offence. Clause 3 would enlarge the maximum penalties that hitherto have been imposable upon brothel keepers. Clause 5 would repeal Section 5 of the Punishment of Incest Act, which required all proceedings under that Act to be held *in camera*. In the application of the bill to Scotland, provision is made to substitute for Clause 1 a more comprehensive definition of an offence, and the maximum punishment (with or without consent) is put at two years' hard labour when found guilty on indictment; and three months' imprisonment on summary conviction.

Dr. Farquharson, in presenting the case for the bill, gave a brief but very able review of the development of the law on this subject. He traced back from the year 1817 how deplorable, physically and morally, had been the condition of children in the first half of the last century, and the advance of legislation for their care from the year 1861. He emphasized the constitutional relationship between statutes with regard to sexual offences and child protection. In the evolution of the law the question had revolved round the age of 16 as that at which childhood was likely to have ceased. He suggested therefore, with reference to Clauses 1 and 2 of the present bill, that the chief point to be determined was at what particular year was the age of childhood to be fixed, and, if fixed at the age of 16, then it was right that the fullest protection should be given to that period of childhood, both as to sexual offences and offences taken up in the Children's Act. In this regard he pointed out how, in successive Acts of Parliament, the age up to which a child should be protected had been advanced, and he submitted that with a right sense of national obligation the age of 16 should now be accepted as a definite milestone.

In support of this view Dr. Farquharson afterwards touched upon the biological or scientific aspect of the subject. In the human mammal there was an abnormally long period of dependence by the child upon the parent for care; and there was no period during that time more urgently calling for protection than that between 15 and 16 years of age. At that period there was a certain hiatus between parental care and the needs of the child; it was a time when the State should step in to exert every form of protection that it could. He dealt next with the public health aspect. A vast amount of physical disability found during the war to be prevalent was directly traceable to the conditions of life during the past half century. He was certain that an enormous amount of the venereal disease which prevailed—he would say 80 per cent.—was transmitted by children and very young persons. No other measure could be more fraught with good, not only for the prevention of prostitution, but to bring home to the very young the nature of the matter, and to save them from embarking on a career of vice. It would also tend more than almost any other health measure of the past to prevent the transmission of venereal disease. This was a bill for the protection of the race, and a stepping stone to a greater and higher physical efficiency.

Mr. Wignall seconded the motion, and recalled that the bill was the outcome of the recommendations of the Joint Committee of the two Houses of Parliament. It was based on the Bishop of London's Bill, which was one of those considered by the Committee.

Major Christopher Lowther moved the rejection of the bill, taking the view that more could be done to cure this kind of immorality by education and proper protection of children by parents and guardians. In regard to Clause 1, he raised the question of the incitement by girls, which was sometimes revealed in assize trials. He objected to Clause 2 as contrary to the spirit of British law by making a man guilty in the absence of intention; he objected to it also because alien girls in this country, while under 16, often had the appearance of being 18, 19, or 20 as compared with English girls. He believed that the mothers of this country who had sons as well as daughters requiring protection would be opposed to the measure.

Captain Loseby seconded the amendment, but said that Clause 2 was the only part of the bill to which he objected.

Mr. J. W. Wilson supported the bill, and Sir Ryland Adkins, speaking with considerable experience in the courts, also favoured second reading, but reserved his judgement on Clause 2 until after there had been discussion in Committee. He hoped that the promoters of the bill would not stand by the proposal to extend the limit of time for prosecutions to a year.

The Home Secretary (Mr. Shortt) urged the House to give the bill a second reading as a measure which had been proved to be very necessary. It was needed for the wretched children who had been absolutely neglected by their parents. This was not legislation to produce morality between adults, but to protect the children, and as for Clause 2 he added that if a man was reckless he must take the consequence of his recklessness.

After further discussion, the bill was read a second time and referred to Grand Committee.

Hospital Disinfection.—On inquiry by Lieutenant Commander Kenworthy, on July 12th, Sir L. Worthington Evans said that the hutment on Spike Island was used as a segregation camp for soldiers during the war and until December 7th, 1920. It was closed in accordance with the policy of treating venereal diseases in sections of general hospitals, and without any reference to the need for accommodation for Irish prisoners. Seventy-four days—that is, from February 19th, 1920—elapsed between the sick soldiers moving out and the Irish prisoners moving in. During the interval the camp was disinfected, and all bedding and blankets disinfected and removed, the latter being replaced by new bedding and blankets. These measures were carried out under the supervision of an officer of the Royal Army Medical Corps. The Assistant Director of Medical Services, Irish Command, inspected the camp before the Irish prisoners were moved in, and he was satisfied that there was no risk of infection. No trace of venereal or other disease had occurred among the prisoners which was traceable to their location at Spike Island.

Weather Conditions.—Sir A. Mond stated, in answer to Sir Walter de Frece on July 13th, he had issued a circular to local authorities and their medical officers of health as to the danger to young children of epidemic diarrhoea in the existing weather conditions (see page 125). Dr. Fremantle asked the Minister to take steps to warn the public against the common misconception that throwing disinfectants down drains was an advisable thing, seeing that it often stopped the septic processes on which the treatment of sewage depended.

Venereal Disease Amongst Seamen.—Major Colfox asked, on July 14th, if the Government was prepared to give facilities for the passing into law this session of a one-clause non-contentious bill to amend the Merchant Shipping Act, 1906, Section 34, subsection (1), so that British seamen might no longer suffer under disabilities not shared by their fellow countrymen or by foreign seamen in being penalized if they sought treatment for venereal disease. Mr. Baldwin replied that a clause dealing with this matter would be included in the next Merchant Shipping Bill, but he was afraid that it was not possible to introduce legislation this session. Captain Elliot asked whether, seeing that this was an urgent matter in relation to infectious disease, it would not be possible, if agreement were reached, to have it dealt with this session. Mr. Mills asked whether the Government knew that the Shipping Federation and the Seafarers' Joint Council were in agreement on this subject, and that it was almost a non-contentious matter. Mr. Baldwin suggested questions to the leader of the House.

Experiments on Living Animals.—Sir John Baird, on July 14th, on behalf of the Home Office, made the usual motion for the annual return showing the number of experiments on living animals during the year 1920 under licences, with distinction as to the nature of the experiments.

England and Wales.

VOLUNTARY HOSPITAL POLICY.

A SPECIAL meeting of the President and General Council of King Edward's Hospital Fund in London was held in St. James's Palace on Wednesday, July 13th. The Earl of Donoughmore presided, in the absence of the Prince of Wales, who sent a message welcoming the fact that Lord Cave's Committee had reported so strongly in favour of the voluntary hospital system. His Royal Highness expressed the hope that if the Government could not do as much as the Committee thought would be required, a still greater effort would be made by the hospitals, the central funds, and the public to carry out the suggestions in the Committee's report.

Lord Stuart of Wortley, Chairman of the King's Fund Policy Committee, presented that committee's preliminary report on the final report of Lord Cave's Committee. This drew attention to the steps to be taken and the new duties which would fall on the King's Fund if the committee's recommendations were adopted. Emphasis was laid upon the urgency of the situation, in view of the limited amount of time at the disposal of everybody concerned, and upon the need for prompt action.

On behalf of the King's Fund Policy Committee Lord Stuart accordingly moved the following resolution:

> That the General Council of King Edward's Hospital Fund (*a*) thanks Lord Cave's Committee for its sympathetic and clear-sighted survey of the problem and in particular for emphasis laid by the report upon the value of individual effort and initiative in hospitals and for the fruitful suggestions of methods by which hospitals could restore their finance; (*b*) welcomes the recognition by Lord Cave's Committee that none of these new methods will immediately produce a large revenue, and that the next two years must be regarded as an emergency period during which a Government grant on a sufficiently substantial scale will be necessary, subject to such conditions and administered by such machinery as would secure the maintenance of the voluntary system; (*c*) considers that the sum of £1,000,000 recommended by Lord Cave's Committee for the year 1921 would probably be required for this purpose, since the evidence in the possession of the King's Fund goes to show that the deficits at the London hospitals alone are likely to amount to about half this sum; (*d*) desires to emphasize the fact stated by Lord Cave's Committee, that, solely as a consequence of the war, many of the hospitals are at present carried on at a large weekly deficit, and that the position of hospitals throughout the country is thereby imperilled; (*e*) urges the consequent danger from a delay of even a few weeks, and the importance of prompt action to carry out the recommendations of Lord Cave's Committee, in order to avoid immediate disaster to the hospitals and the sick poor, and the enormous expense to the Exchequer which would follow if the voluntary system were to collapse and hospitals had to be provided by public funds.

The motion was seconded by Sir Norman Moore, President of the Royal College of Physicians of London, and after discussion was put and carried. Copies were ordered to be forwarded to the Prime Minister, the Chancellor of the Exchequer, the Minister of Health, and the members of Lord Cave's Committee.

It was further resolved to inform the hospitals that King Edward's Fund would, at the ordinary current distribution, take into account what had been done by the various hospitals to carry out the recommendation of Lord Cave's Committee to the effect that they should take all steps open to them to re-establish their financial position within the next two years.

WELSH NATIONAL SCHOOL OF MEDICINE.

At a meeting on July 15th of the Council of the University College of South Wales and Monmouthshire, Dr. Alexander Mills Kennedy, of the University of Glasgow, was appointed to the chair of medicine in the Welsh National School of Medicine, Cardiff (University of Wales). Dr. Kennedy, who is at present senior assistant to the Muirhead Professor of Medicine in Glasgow University, and one of the assistant physicians to the Glasgow Royal Infirmary, has acted as director of the Research Department at Glasgow Royal Maternity and Women's Hospital on behalf of the Medical Research Council. He is the joint author of a large monograph on cerebro-spinal fever, and has contributed numerous papers to medical journals. The new professor takes up his duties as Professor of Medicine and Director of the Medical Unit at Cardiff on October 1st.

CO-ORDINATION IN THE CARE OF SICK CHILDREN.

On the invitation of the Medical Board of the Royal Liverpool Children's Hospital, a meeting of physicians and surgeons specially interested in the institutional care of sick children was held at the hospital on July 1st. Those present unanimously constituted themselves "the Medical Council for the Care of Sick Children of Liverpool and District." An executive committee was appointed, and subcommittees were formed to which the following subjects were referred: (1) the development of increased efficiency through co-ordination in the care of sick children; (2) after-care; (3) institutional care of sick babies; (4) research and post-graduate instruction.

VERMINOUS CONDITIONS.

The Public Health Committee of the London County Council has recommended that application should be made to Parliament in 1922 for amendment of the General Powers and Public Health Acts to secure than whenever a person is found to be infested with vermin (including fleas, bugs, lice, and itch-mites), or a child is found by a local education authority to be infested with such vermin or to be in a foul and filthy condition, the premises, bedding, clothing, and other articles in use by such person or child shall be liable to be compulsorily cleansed, purified, or destroyed. The attention of the Ministry of Health is also to be drawn to the desirability of an amendment to the Cleansing of Persons Act, 1897, requiring that the provision for dealing with persons affected with vermin or in a foul or filthy condition should be made by each local sanitary authority, and to the desirability of introducing legislation empowering local authorities to inspect second-hand wearing apparel in the hands of dealers, making it an offence knowingly to deal in such apparel when it is verminous.

Scotland.

EDINBURGH UNIVERSITY: ADDRESS BY SIR ROBERT PHILIP.

AT the graduation ceremonial in medicine which took place at Edinburgh University on July 15th, after the degrees had been conferred, details of which are given elsewhere, Sir Robert Philip delivered an address to the new graduates. He said that a conspicuous landmark of the old place was slipping from immediate view in the retirement of Professor Sir John Halliday Croom, who had taught in that medical school for fifty years, and had added further lustre to the famous chair of midwifery. These fifty years had meant much to the faculty of medicine; in 1871 the medical students numbered 712, while this year the medical students enrolled in the University numbered 1,960. During that period some 8,500 students had graduated as bachelors of medicine, and 2,488 as doctors of medicine. In 1871 the faculty of medicine included twelve professors and eleven assistants, a total personnel of twenty-three; in the current academic year the faculty of medicine included twenty professors, with whom were associated seventy-eight lecturers and almost one hundred assistants, a personnel of approximately two hundred. The figures illustrated strikingly the development of modern medicine, and showed that the needs of the student had been abundantly supplied. The remarkable advances of the last fifty years were in chief part due to the inspiration and genius of Pasteur, who in 1870 left Strasbourg for the last time, interrupted in the midst of his series of wonderful researches by the roar of cannon. The principles of antiseptic surgery which, based on the teaching of Pasteur, Joseph Lister had propounded in Scotland in 1867, were so little appreciated that in the early battles of 1870–71 no one thought it worth while to apply them practically. In the *University Calendar* of 1871 bacteriology did not appear, nor was there then a chair of public health. The significance of preventive medicine to-day was emphasized by the place it held in connexion with every subject of the curriculum, and by the establishment of chairs and lectureships in several special departments. The artificial distinction between so-called medical officers of health and the great body of the profession must inevitably yield to the larger view that they were all concerned with the protection of the nation's health.

Correspondence.

ANGINA PECTORIS.

SIR,—Jonnesco's operation of division of the vagus, mentioned by Dr. E. A. Starling and others, for the relief of angina pectoris is very interesting to me as, in 1893, at a Branch meeting of the Association at Yarmouth, I published my hypothesis that in (say) 90 per cent. of cases the malady was due to aortitis, and that death was due, not to "heart failure," but to vagus inhibition—both propositions then made for the first time. Since then I have prescribed atropine—as advised in my book on arterial disease—to protect the heart from the inhibition. Where the heart is sound it escapes from the vagus grip; but in the large majority of the cases the heart is not sound.

My purpose now is to say that Professor Wenckebach of Vienna wrote to me some months ago to say that he had completed his five-hundredth necropsy on cases of angina, and that he was "absolutely with me" as to my interpretations of the disease. He added that he had found in many of the severer cases that the vagus in the neck was tender to pressure, sometimes very tender; so much so as to make it desirable that stiff or tight collars should be removed.

My hypothesis is now widely accepted in France and in the United States, but hardly yet in England. Indeed, a few years ago a dear friend of mine argued with me that it was a "childish opinion," and advised me for my own reputation's sake to say no more about it. That notwithstanding in a small minority of cases the angina arises in or about the heart I set forth and described in my Arteries book. Mr. Verdon's book is replete with interesting matter, and he has paid more formal attention than I had done to the gastric side of angina; a feature in these cases which I am sure is of great importance. It will be most interesting to hear farther reports of Jonnesco's operation.—I am, etc.,

Cambridge, July 16th. CLIFFORD ALLBUTT.

THE COLON AND COLITIS.

SIR,—May I, while testifying to the great helpfulness of Lord Dawson's Annual Oration to the Medical Society of London, published under the above heading in your issue of July 9th, make the following comments?

1. Anatomical varieties do count and fixing operations are in use and of value. Recently I have carried out a number of colon and other fixing operations on pensioner patients suffering in the way Lord Dawson describes. The bulk of these patients had been idle for years; all had spent many months in hospital; many had had previous operations, usually appendicectomy. The time is not yet ripe for full publication, but the large majority of the patients are greatly improved; some have already fulfilled the pensioner test of cure by having gone back to work. Comparison of opaque meal radiographs before and after operation has shown the reality of the fixations. The operative work of Rovsing in Copenhagen, Coffey in America, and Waugh in this country, shows the value of fixations.

2. My experience has also taught me that in many cases where operation is not deemed necessary or thought advisable, a properly supporting "truss" belt, giving an uplift to the lower abdomen, is very useful in relieving symptoms. A doctor recently wrote to me of a patient: "to report the wonderful success achieved by the abdominal belt . . . after years of misery she is now entirely free from abdominal discomfort." To test whether a belt will be of value let the investigator stand close behind the patient, link his hands across the lower abdomen and lift; relief of any pain present and a feeling of comfortable support suggest that the belt will prove useful.

3. In reference to Lord Dawson's statement that it is "the musculature (of the bowel) and its innervation which count," I believe that it is the drag on the mesenteries rather than the change in the bowel wall which principally causes the pain and other symptoms. Apart from the testimony given to the value of fixing operations and of support, it is known that in abdominal operations under local anaesthesia bowel manipulations are painless, but bowel dragging causes pain, and under general anaesthesia bowel dragging causes shock. A non-obstructing carcinoma of the bowel wall does not cause pain. These facts suggest that it is to dragging due to prolapsed viscera that symptoms are to be referred.—I am, etc.,

London, W., July 11th. A. W. SHEEN.

RADIUM THERAPY IN UTERINE CANCER.

SIR,—I read Mr. Hayward Pinch's paper, and Mr. Drew's comments on it, with great interest, and while the former is cautious and hardly enthusiastic as to the results of treatment by radium, he does not appear to me to justify Mr. Drew's pessimism.

The treatment of carcinoma of the cervix is only a vogue, inasmuch as it appears to hold out greater promise of success than any other treatment yet discovered, and the reports available from Continental and American gynaecologists can leave us in no doubt that the results are encouraging and heartening in both early and advanced cases. Mr. Pinch refuses to treat all early and operable cases by radium; is he therefore entitled to express a magistral opinion upon the results of such cases treated by radium? Recasens (Madrid), an eminent gynaecologist, has abandoned the Wertheim operation since 1913 in favour of radium, and reports better results from it than from the operation. Taussig (*American Journal of Obstetrics and Gynaecology*) reports 223 cases of carcinoma of the cervix free from recurrence five years, and concludes that (*a*) the percentage of cases cured by radium is equal to the number cured by operation; (*b*) the percentage of early cases cured by operation is slightly larger than those cured by radium; (*c*) the percentage of cases (late) cured by operation is smaller than that treated by radium.

These and many other published papers seem to suggest that Mr. Pinch is over-cautious in his estimate of radium treatment for carcinoma, and his conclusions are necessarily drawn from the treatment of inoperable cases. The treatment of early cases has not been tried out in England, whereas in France, Spain and America it has definitely emerged as a rational means of dealing with carcinoma of the cervix. What of the Wertheim operation? After two decades it remains upon trial, and the results are not heartening or encouraging, and any alternative to it would be welcomed. Again I quote Recasens, who abandoned the operation in 1913.

In advanced cases there is no dispute that surgery is out of the question for I find few who are prepared to revert to the cold cautery of Percy, and the recognized truth that radium will stop haemorrhage and offensive discharge, relieve pain and even heal the local ulcer, certainly brings hope to the stricken patient as well as to the surgeon.

Cancer is either operable or inoperable. In the latter event we sentence the patient to death relieved by opiates; in the former case we dwell upon cures of five to ten years' or longer duration and still cannot affirm that there will not be a recurrence. Are we worshipping the time cure as a fetish?

The immediate reason for the patient consulting us is haemorrhage, discharge, pain, or an ulcer; how are we to deal with it? In inoperable carcinoma mammae it is justifiable to excise the tumour locally, and although we have not cured the patient in the time sense, we have cured the local lesion, and trust that recurrence will take place in the viscera. In carcinoma of the cervix radium will produce the same result; and after all this is the basis of Mr. Pinch's paper, so why expect a time cure from material which was admitted to be in the main inoperable?

Abroad radium appears to be used (*a*) to cure, in the time sense, early cases; (*b*) to relieve and cure locally advanced cases.

In England it appears to be used (*a*) to render borderline cases operable; (*b*) to relieve advanced cases; (*c*) for prophylactic irradiation.

These methods of employment express the divergent views of gynaecologists, and, as Mr. Pinch suggests, the truth probably lies between them, and therefore I do not think that the pessimism expressed in Mr. Drew's letter is justified.—I am, etc.,

London, W., July 10th. SIDNEY FORSDIKE, M.D., F.R.C.S.

EXTROVERSION OF THE BLADDER.

SIR,—The sequel of the two cases of extroversion of the bladder, reported by Mr. Lendon and Mr. Newland in the BRITISH MEDICAL JOURNAL for July 9th, will be read with interest by many surgeons, for it is only by the end-results that we can arrive at the best method of treating these distressing cases. The authors state that it would be interesting to learn the ultimate result of similar cases reported in the JOURNAL.

The case I reported was that of a boy, aged 5 years, on whom I operated in July, 1908, performing the extra-peritoneal operation described by Lendon. The after-history has been as follows: Two years after operation he had frequent bleeding from the rectum, due to small adenomata, which I removed. I did not see him again until March, 1921, when a strong, healthy looking boy of 17 called to know if I would give him a certificate that he was in good health and able to do labouring work. He had been working as a clerk, but said the indoor life did not agree with him, and he wanted to go to Canada to try for open air work there. He seemed in perfect health, and has never had any pain or tenderness over the kidneys. He has had no return of the bleeding during the past eleven years. The penis and testicles are well developed. He has quite good control over the urine, but has to get up once or twice at night to empty the rectum. He has a sound abdominal scar where the bladder was removed. It is now thirteen years since the ureters were implanted into the rectum, and the kidneys appear to have escaped infection so far.

It will be interesting to know if cancer of the rectum is more likely to occur after implantation of the ureters. Cancer sometimes develops in the extroverted bladder where no operation is done. My case had several adenomatous nodules on the bladder at the time of operation, and some afterwards developed in the rectum, but there has been no further trouble for eleven years.—I am, etc.,

Dublin, July 12th. C. ARTHUR BALL.

HERPES ZOSTER AND VARICELLA.

SIR,—With respect to the association of these two eruptions as exemplified by cases recently reported, I would suggest that those interested focus their attention on those cases in which the varicellar follows the herpetic eruption in the same individual. They will then, I think, get at a reasonable explanation of the association. The following are the noticeable points: (1) When both eruptions appear in the same individual the herpetic invariably precedes the varicellar; (2) there is a constant interval of two to five days between the two eruptions. The disease in this form may therefore be looked upon as a varicella with a prodromal rash, and contacts will be infected with one or both eruptions according to age and temperament. Adults and neurotic children will generally be found to exhibit the herpetic eruption commonly known as "shingles," while the majority of young children will exhibit the varicellar eruption only, commonly known as "chicken-pox." Taking this point of view we cannot, I think, get away from the inference that we have to deal with one disease (call it "varicella herpetica" or what you will), which may be split up according to circumstances into shingles or chicken-pox. I have just had a typical case of the sort under treatment.

J. H., a small and rather nervous boy of 6 years, sat next to a chum of his own age at a bioscope, who had chicken-pox scabs still on him. About fourteen days later J. H. broke out with a painful shingle eruption over the eighth and ninth right intercostal and epigastric area with confluent vesicles in the region of the angle of the right scapula. The usual mixture of sodium salicylate failed to allay the pain or give him rest at night, so that 2½ minims of liquor morphinae had to be administered. Three days later the first chicken-pox spots appeared, and his body was soon covered with the typical eruption.

The noticeable points about the case are: (1) A neurotic temperament (inherited from his mother), rendering him susceptible to the herpetic as well as the varicellar eruption; (2) the unusual pain (for a child), associated with the shingles, doubtless dependent on the same cause. The boy's mother had had chicken-pox with her twin-brother at the age of 22 years, the latter's attack being so severe as to be mistaken for small-pox. After her marriage she suffered from an attack of shingles on the left side when about 7 months pregnant.

The earliest record of the double eruption that I have been able to find was made by Pundschu in the *Wiener medizinische Presse* of 1865, and is quoted in the New Sydenham Society's *Transactions* for 1867. There are also two interesting diagrams of the double eruption in the *Medical Review*, vol. vi, p. 43 (1903), and in the *Journal of the American Association* for 1910, p. 532.—I am, etc.,

W. P. LE FEUVRE, M.R.C.S., L.R.C.P.

Knysna, South Africa,
May, 1921.

THE USUAL SITE OF ORIGIN OF ENDO-LARYNGEAL CANCER.

SIR,—In your issue of July 16th Dr. Irwin Moore enters a claim for priority in establishing the above point, on conclusions he "had already come to in 1918." He says these conclusions were the results of his experience and his researches into literature.

Direct examination during a laryngo-fissure—and at many laryngo-fissures—is the only method of definitely establishing the point under discussion. I had the pleasure of assisting Dr. Moore at his first laryngo-fissure operation in 1918—the year in which he published his conclusions. But I had had the advantage of Dr. Moore's skilled help at some thirty to forty of my laryngo-fissures in the previous ten years, and I venture to think that no inconsiderable part of his experience may have been gained in my practice.

As to his researches in literature, it is clear from his letter that he had not neglected the *Proceedings of the Royal Society of Medicine*. I fear, however, he must have overlooked the Section of Laryngology, vol. x, p. 52, where the following occurs in the report of the meeting of the Section on February 2nd, 1917:

"Sir StClair Thomson (in reply): It is striking that not one of the four cases shown this afternoon had fixation of the cord. . . . In two of to-day's cases the growth was on the anterior four-fifths of the cord. The old idea that malignant disease selects by preference the posterior aspect of the glottis is, in my experience, quite a mistake. Perhaps the growths in half my cases were more in the anterior than in the posterior half of the larynx."

This conclusion, founded entirely on my own observations, was made public more than a year before the appearance of the communication to which Dr. Moore refers your readers in support of his claim.—I am, etc.,

London, W., July 19th. STCLAIR THOMSON.

ENUCLEATION OF THE TONSILS.

SIR,—In spite of our rapidly growing knowledge of the far-reaching effects of focal sepsis in general and that of the tonsils in particular, there is still a section of the profession opposed to the complete removal of the latter. This opposition is largely owing to the supposed dangers of haemorrhage and post-operative deformity. Both these are due to bad surgery.

The letter of "Clinic" in your issue of July 9th affords a good illustration of this. "Clinic" apparently does several hundred tonsillectomies a year. Nevertheless, we find him waiting till the child is "in a bad way from loss of blood" before dealing with the haemorrhage, and then suturing the faucial pillars together as a belated means of obtaining haemostasis. Apart from the questionable surgical propriety of burying a necessarily infected area, and apart from its doubtful efficacy, the method tends to produce post-operative deformity without the addition of a manipulative dexterity which tears the posterior pillars "like wet blotting-paper." The obvious surgical method of dealing with haemorrhage is to take up the bleeding points with forceps at the time of the operation and at once apply ligatures. If there is more haemorrhage than can be controlled by this method it is due to unnecessary trauma of the muscular tissue in the tonsillar bed. If the operation is properly performed not only should the haemorrhage be perfectly under control, but at the end a few blood-stained swabs should represent the patient's total loss. As to the pillars, they should remain not only untorn but unbruised, and with the mucous membrane intact upon both their surfaces. In this way there will be no greater danger of post-operative haemorrhage than in any other operation where an open wound has to be left to heal by granulation. There will be no post-operative deformity, and convalescence will be rapid and comparatively painless.—I am, etc.,

London, W. July 9th. GILBERT CHUBB.

BIRTH CONTROL.

SIR,—The issue raised by Dr. Mary Scharlieb, in her letter appearing in your issue of July 16th, is so vitally important that I feel it must not go unanswered, especially in view of the weight rightly attaching to anything uttered by one who has attained to so distinguished a position in the profession as she has done.

Mrs. Scharlieb admits that "on the surface of things it would seem as if a knowledge of how to prevent the too rapid increase of a family would be a boon to over-prolific and heavily burdened mothers," but she thinks that the disadvantages outweigh the advantages.

The first disadvantage, in her opinion, is that the artificial limitation of the family causes damage to the woman's nervous system. This, of course, is a practical point of the utmost importance, and raises the whole question of the injuriousness or otherwise of contraceptive methods, assuming that the best methods are selected, and that they are properly used. I am aware that some opponents of birth control have alleged that all sorts of physical ills follow the use of contraceptives, including uterine carcinoma, fibroids, ovarian disease, insanity, etc. The difficulty is to distinguish between *post hoc* and *propter hoc*. The use of contraceptives has become so common amongst the educated classes that it must be very easy to find numerous instances where the victims of any of these ills will admit to having used contraceptives at some period of their lives. On the other hand, other recognized authorities have failed to trace any real connexion. Thus, Sir Francis Champneys, who is not at all an advocate of birth control, and not likely to be biassed in favour of contraceptives, when giving evidence on the question before the Birth Rate Commission, said: "I do not think it is true to say that in the majority of cases prevention does affect health in a deleterious manner." Questioned as to the use of soluble pessaries, he replied: "I believe the common ingredient is quinine, and I do not believe that does any harm whatever." Dr. Hector Treub, professor of gynaecology at the University of Amsterdam, in his handbook of gynaecology (fourth edition, 1903), after describing several of the methods of preventing conception as harmless, says: "And the fact in itself that pregnancy is prevented cannot be said to be a source of danger." Professor Forel, a recognized authority on sex, writes:

> "We must no longer be content to remain indifferent and idle witnesses of the senseless and unthinking procreation of countless wretched children, whose parents are diseased and vicious. . . . We must, therefore, recommend to all persons who are sickly or infirm in body or mind, and especially to all suffering from hereditary ailments, the use of means for the prevention and regulation of conception. . . . We refer, of course, to such preventive methods as are completely harmless to the persons making use of them."

A few years ago, in order to ascertain what was the prevailing opinion of the medical profession in this country as to the injuriousness or otherwise of contraceptives, I issued a questionnaire to 100 medical practitioners, including a number of women doctors, selected quite impartially. The great majority of the replies were to the effect that the two forms of contraceptives which I specifically mentioned were not injurious. I will quote two replies as a set-off against Dr. Scharlieb's opinion. The first was from a woman, the second from a man.

1. "In nearly thirty years of practice among women, of which nearly twenty years have included experience on the staff of a women's hospital, I have not met a single case in which I could trace ill health to this cause. Naturally, both forms of practice have involved the receipt of many confidences on the subject."
2. "I am convinced after many years of gynaecological and obstetrical practice that the above practices (the use of contraceptives) are extensively practised among the educated classes. Personally, I have been consulted on several occasions about these methods, whether they have any deleterious effects upon the general health of either the male or the female. In both cases I have always, from practical experience, answered in the negative."

Dr. Scharlieb's second objection is to the effect that she believes that the practice of birth control may cause sterility, so that subsequently the couple, when they want children, are unable to obtain them. Personally, I doubt the validity of this objection. I have been unable to find any satisfactory evidence to justify such a supposition. Of course, sterility being very common, it may often happen that couples who have practised birth control from their earliest married days only discover the sterility later on when they want children. It is very possible that they will then reproach themselves together with those who advised them. But the obvious way to meet this contingency is to advise all young couples to make sure of some children, if they can, before beginning to practise birth control.

I must also join issue with Dr. Scharlieb in her third objection, that the use of contraceptives increases self-indulgence on the part of the husband. There is no evidence that the father of an unlimited family is any more abstemious than the father of the strictly limited one. In any case, her objection could hardly apply to the use of contraceptives by the husband, which implies an appreciable measure of self-control.

Dr. Scharlieb's fourth objection is that unmarried persons may abuse birth control. Of course, all knowledge may be abused. Is that a sufficient reason for suppressing knowledge, or for censuring those who use it legitimately?

May I say, in conclusion, that no unbiassed observer can doubt that birth control has come to stay. It is eminently desirable, therefore, that the medical profession should study it in all its aspects, and especially in regard to its practical application. In the past this aspect has been sadly neglected. There is room for full and thorough scientific research. I am glad that attention is now beginning to be turned to a subject fraught, as I believe, with great possibilities for good to the whole human race.—I am, etc.,

Leicester, July 17th. C. KILLICK MILLARD.

SIR,—In her letter of July 1st Mrs. Scharlieb states that in her experience prevention of conception has led to sterility and nervous disease. This is quite at variance with the experience of many who have had good opportunities of judging. Many of my patients have practised prevention of conception successfully for years with nothing but benefit; and when circumstances have allowed, and another child has been desired, conception usually follows intercourse whenever prevention is discontinued. In a case at present under my care the third conception has occurred in a married life of eight years, each conception having been wished for and prevention having been practised between each in order to "space" the family. Such cases prove that prevention does not cause sterility. Mrs. Scharlieb's cases prove nothing—they may have been sterile from other causes.

As regards the alleged nervous diseases, it is not the mother of a limited family who is particularly prone to these at the menopause; it is the worn-out woman who has borne child after child beyond her strength, and the unwilling celibate, who fall victims to their nerves. It is hard to follow Mrs. Scharlieb on the moral issue—surely it is better for a woman habitually immoral to have no child? Would she have the State burdened with more bastards, or would she have the prostitute continue to practise abortion? Surely in a case of this sort prevention is a duty to the race just as it is in the case of physical and mental defectives?

Mrs. Scharlieb does men less than justice when she implies that without the fear of conception they would make their wives slaves to their lust; and she evidently does not realize that in the case of a healthy young couple sexual intercourse only once a year could quite well result in a family of a dozen or more, so that if early marriage is contemplated some form of birth control must be used by practically all but the utterly reckless.

Birth control in any form involves self-control, and Mrs. Scharlieb need not fear that its spread will lead to unbridled sexual passions—these are not prominent characteristics of the professional and educated classes who chiefly use birth control at present.—I am, etc.,

Mancot, Chester, July 17th. BARBARA G. R. CRAWFORD.

SIR,—The opposition of Dr. Mary Scharlieb to birth control suggests that she does not appreciate the supreme fact of sociology—namely, that the world's food supply has always been increased so slowly that only a small percentage of couples in the world could get sufficient food for more than two or three children. We have to choose between birth control on the one hand, and poverty, high death rates, unrest, war, prostitution, and abortion on the other.—I am, etc.,

Brasted, Kent, July 18th. BINNIE DUNLOP, M.B., Ch.B.

A COLLEGE FOR BLIND GIRLS.

SIR,—May I be allowed to draw attention to the new college for the higher education of blind girls which has recently been opened under the auspices of the National Institute for the blind? It is situated at Chorley Wood, on the foothills of the Chilterns, some twenty miles from London by road and rail. The building is a fine old mansion standing on high ground on the south border of the wide and beautiful heath which tops that piece of country. The spaciousness of the house, the spread of the grounds with the splendid trees therein, and the openness of the position together make it a place of exceptional interest for a school of this order. It would be difficult to find a place where other senses than sight received so many and such happy impressions.

The college is for the higher education of girls who are totally blind or have no useful degree of sight. The education will be as liberal as in the best public schools for girls, and the physical and mental development afforded will enable blind girls to live full and active lives at school, at home, and in professions. The principal is Miss Phyllis Monk, formerly of Girton College, Cambridge, and latterly a mistress of Roedean School, Brighton; with her is associated efficient teaching and house staff.

I have visited the school, and can speak of the excellence of the arrangements for teaching and for the comfort of the girls; also on my visit there accompanied me a lady experienced in domestic affairs, and she was greatly impressed with the domestic arrangements and the evident happiness of the resident pupils. The fees for a place of this order are moderate, and there are some scholarships for girls of promise.

There are (happily) not many blind girls of the professional class, but for these few there can be no better place of education and training than this new college. Miss Phyllis Monk, M.A., the principal, will be pleased to receive doctors and others interested during the afternoon of Saturday, July 23rd. The address is "The Cedars," Chorley Wood, Herts. The school is ten minutes' walk from the station across the heath, and the London road passes within a hundred yards.—I am, etc.,

London, W., July 5th. N. BISHOP HARMAN.

PUERPERAL INFECTION.

SIR,—Much has been written lately, both by specialists and general practitioners of large obstetric experience, on the origin, prevention, and treatment of puerperal sepsis, but not one has drawn a broad line of distinction between those cases which are avoidable and those which are unavoidable. Before condemning the medical profession for the high rate of mortality in confinements it would be more just to give some idea of the percentage of cases caused by auto-intoxication and those due to the carelessness or lack of skill of the accoucheur.

Many a man has been blamed unjustly for the death of a patient from puerperal sepsis, when the cause of the death was auto-intoxication and had nothing whatever to do with the conduct of labour. Every year large maternity hospitals have admitted into their wards cases of puerperal septicaemia which have never been examined, have no lacerations, and when the placenta has been expelled complete. Had any of these cases been attended, in general practice, and had the medical man applied forceps or extracted the placenta manually, I feel sure that he would have been blamed for the death, had such a catastrophe followed. Most men are engaged to attend a confinement months ahead and do not see the patient again until labour has commenced or has terminated. Would any reasonable person suggest that it is his duty to examine the teeth, tonsils, toe-nails, or other parts of the body with the idea of locating some septic focus?

I hold strongly that cases of auto-infection following labour should not be included in the statistics of puerperal sepsis, any more than a death from auto-infection following some minor operation performed by a general surgeon should be certified as being the result of the operation instead of a general septicaemia. I heard a medical man say once that if he had a fatal case of puerperal sepsis he would be ashamed of himself and never attend another case. Surely this is too drastic a self-condemation, unless the death were due to carelessness or wrong treatment.

Leaving out all cases of auto-infection, following labour, I venture to put forward the following hypothesis:

No case of avoidable puerperal sepsis occurs, unless—

(1) The cervix uteri, vaginal wall, or perineum is lacerated;
(2) The hand or some instrument is introduced into the vagina or uterus;
(3) Some cotyledonous remnant of the placenta or portion of the membranes is left behind in the uterus.

A native woman, wearing filthy clothing, confined in a road or in a field, does not become septic, any more than does a poor woman delivered naturally on a filthy bed in a dirty hovel. On the other hand, a society lady, protected by every antiseptic and aseptic device known to modern science, may develop puerperal sepsis if any of the three conditions above mentioned obtains.

The most frequent causes of severe lacerations are:

(1) The premature use of forceps;
(2) Unreduced occipito-posterior presentations;
(3) The use of forceps in unsuitable cases, such as brow or parietal presentations;
(4) The premature use of pituitrin.

Pituitrin should be administered only when the cervix is dilated fully, or when the lips of the cervix can be pushed back over the head. Forceps should be applied only when the head is well moulded, and is in a position and with a presentation suitable for delivery by the natural channel.

Caesarean section or craniotomy is preferable to the application of forceps in difficult cases in which the disproportion between the mother and child is very marked. Davis of Philadelphia goes so far as to say that when difficult forceps operations are attended in tenements and other unfavourable surroundings, septic infection is inevitable. It is a clever man who knows his own limitations and shortcomings, and, when possible, it is advisable to send such cases to hospital, and, when this is impracticable, further medical aid should be called in.

The third condition can be avoided by:

(1) Being patient and not trying to express the placenta forcibly until it is separated;
(2) Examining carefully the placenta and membranes;
(3) Removing any remnant left behind in the uterus with a gloved hand.

In normal cases intrauterine douches should be avoided, either before or after delivery, though they may be necessary after the use of forceps, turning, or the removal of the placenta manually. Whether it is advisable to wear sterile gloves and jacket, or rely upon clean hands and antiseptics, seems to be a matter of opinion, though the former procedure seems preferable in every way, especially in the case of a man whose hands have been soiled by attending to his car or his garden.

It has been said, aphorismically, that a man who wears a clean collar and shirt every day will never get a septic case, and certainly it may be said, axiomatically, that such a man is less likely to be careless or dirty than one who takes no pride in his personal appearance and cleanliness. I have seen such a man scrub his hands and soak them in biniodide and yet have dirt beneath his nails. One of your correspondents considers that the use of sterile gloves and apron is to be deprecated as it leads to inevitable carelessness, whilst another holds a brief for both gloves and apron, but thinks that "antiseptics are a snare to the careless." Generally speaking, the man who is dirty, careless or untidy in private life shows the same weaknesses in his profession. The fact that a medical man has been known to poke the fire, blow his nose or put on his glasses after putting on sterile gloves, is no true condemnation of gloves *qua* gloves. It would be a pernicious and dangerous doctrine to condemn either sterile gloves or antiseptics simply for the reason that their use may give some men a false feeling of security against infection and sepsis.

In regard to the treatment of severe cases of puerperal sepsis there is everything to be said against the use of the curette, and whenever bacteriological examination proves the presence of a haemolytic infection it is doubtful if operative interference will benefit the patient. Hysterectomy for septicaemia *qua* septicaemia is useless. It has been tried and failed. If there are local abscesses in the uterus or degenerated fibroids, hysterectomy may save a life. A brave man may effect a cure in early cases of puerperal sepsis by performing hysterectomy without waiting for a bacteriological examination. Some cases "cure themselves."

Two of the chief means of preventing puerperal sepsis have not been mentioned by your correspondents. I refer to suitable diet and exercises which increase the natural resistance of the body against infection. A faulty though plentiful diet causes a condition of avitaminosis and depression of the whole alimentary functions. Every pregnant woman should partake freely of natural foods. Surely a woman should train before undertaking the greatest ordeal of her life. No athlete, be he sculler, boxer, or jockey, would dream of overfeeding and rest, yet this is the attitude adopted by most women before their babies are born. The old ideas of "stuffing" and "rest" are exploded. The pregnant woman's diet should be limited in amount and contain wholemeal bread, nuts, eggs, animal fat, fresh fruit and green vegetables, and not consist chiefly of "dead" foods.

Hindhede says, "the principal cause of death lies in food," and few careful observers can deny the fact. Most women exist on food deficient in the fat-soluble factors (vitamin A), which are necessary for the maintenance of the natural resistance against infection. Fresh salads should enter into the dietary of all pregnant women. In most cases green vegetables are cooked, to the destruction of the vitamins and salts. On a diet rich in carbohydrates and poor in vitamins nervous symptoms supervene. Without suitable exercises no woman can be "fit" to give birth to a child, for their regular and graduated use not only develops the muscles but eliminates toxins. In my opinion shock plays a large part in *post-partum* complications, and for this reason I advise the use of scopolamine and morphine at the proper time in all cases.

One cannot leave the subject at issue without protesting against the totally inadequate teaching of practical obstetrics in our hospitals. Of course the whole blame is on the General Medical Council and not on the hospitals. Hundreds of men are sent out into the world qualified, by law, to attend any confinement, without having been given the opportunity either of seeing forceps applied or of applying them themselves, with the result that these men gain their practical experience from their first patients, who suffer in consequence. Until such a deplorable state of affairs is remedied the mortality and morbidity of confinements will remain at the present level.—I am, etc.,

London, W., June 16th. CECIL WEBB-JOHNSON.

SIR,—This subject is one of perennial interest. From the discussion the inference appears to be that there is another factor, besides the micro-organisms found in cases of puerperal fever, a factor which we appear to know little about. A moiety of this factor is immunity. Many of the writers appear to infer that the upper portion of the vagina and cervix are sterile until the infected finger and hand of the accoucheur converts this portion into an infected one. In regard to this point, Dr. A. W. Bourne refers to the large number of patients at Queen Charlotte's Hospital with *ante-partum* discharges, none of whom developed septicaemia. It is also known that the gonococcus and other organisms do not produce puerperal septicaemia. Brouha, quoted in the BRITISH MEDICAL JOURNAL Epitome, No. 444 (April 9th, 1921), states that he performed sixty Caesarean sections, and that in forty-eight cases the women were previously infected by various manipulations hours or days previously; yet every one of these forty-eight cases recovered. Of the twelve uninfected cases two died, one from haemorrhage and the other from septicaemia. Brouha dismisses this last case by attributing the fatal result to imperfect sterilization at the operation.

From these illustrations, ought one to infer that a woman with an *ante-partum* discharge is less likely to get puerperal fever, and that Brouha's fatal case would not have developed septicaemia had she been previously infected, as the forty-eight infected recoveries were?—I am, etc.,

Plymouth, July 2nd. J. S. PEARSE.

CLINICAL AND LABORATORY METHODS.

SIR,—A good deal that is given out as new in the study of cardiology is embodied in textbooks older even than those of Taylor or of Osler. I have been looking up a book that I read as a student—namely, Frederick T. Roberts's *The Theory and Practice of Medicine*, seventh edition, 1888. It would well repay a practitioner to read or re-read the whole article on diseases of the circulatory system, so as to be able to assess what is really new in cardiology. May I quote a sentence or two as bearing directly on questions which are so keenly discussed to-day?

"Much stress has been laid on certain points in making out whether local cardiac symptoms are due to organic mischief or not, namely, that mere functional disturbance is not increased by effort; is inconstant; and is usually brought on by some obvious exciting cause. My own experience would lead me to avoid placing any implicit reliance on such distinctions, except that grave disorder of the cardiac action following slight exertion may be a useful sign indicative of degeneration, when other signs are wanting."

Here is Sir James Mackenzie's "response to effort."

"The questions which have to be considered in any individual case of heart disease are mainly three: 1. Whether there is any danger of sudden death? 2. What are the events likely to arise in the progress of the case, and the dangers to be feared? 3. What will be the probable duration? 4. Whether a cure is possible?

The brilliant work of Sir James Mackenzie is an attempt to answer questions put by Dr. Roberts thirty-five years ago.

The following passage from the same book is a clear anticipation of Sir James Mackenzie's gospel:

"It is a fact familiar to all experienced practitioners that cases of valvular disease of the heart, as determined by physical examination, may exist for many years, even without any symptoms, but this fact was brought into special prominence by Sir Andrew Clark in a paper read before the British Medical Association in 1886, in which he called attention to a large number of cases where valvular disease had been known to have existed for over five years without causing serious symptoms. As the result of his observations this eminent physician remarks: 'It will conclusively appear that there exist multitudes of persons with chronic valvular disease of the heart who not only suffer no inconvenience therefrom, but are also capable of discharging the duties and enjoying the pleasures of life.'"

May I quote just one sentence more to show that physicians thirty-five years ago studied their problems with the same zest as Sir James does to-day?

"The prognosis of cardiac disease with reference to marriage, parturition, and suckling is of much importance, and those who are interested in the subject will find valuable information in the work by the late Dr. Angus Macdonald on *Heart Disease during Pregnancy*."

—I am, etc.,

Exeter, July 3rd. J. PEREIRA GRAY.

Obituary.

JAMES ACWORTH MENZIES, M.A., M.D.,

Professor of Physiology, Newcastle-upon-Tyne.

THE University of Durham College of Medicine has sustained a severe loss by the somewhat sudden death of its esteemed professor of physiology, James Acworth Menzies, at Luton on July 8th. While on his way to Oxford, as a delegate of the University of Durham, to attend the Conference of Colonial and Home Universities, he became ill, and alighting at Luton he was taken to the house of his brother, where he died from cerebral haemorrhage, at an age when most men are at their best. He was a son of the late Rev. R. Menzies, of Riding Mill-on-Tyne, and was a distinguished student of the University of Edinburgh, where he graduated M.B. and C.M. in 1890, and M.D. in 1894, when he was awarded a gold medal for his thesis. His ambition was to become a teacher, and for this he had not long to wait, as he was shortly afterwards appointed demonstrator of physiology at Owens College, Manchester, a post which he held with great acceptance from 1890 to 1896, and also from 1898 to 1899. From this position he retired to take up ophthalmic work in Rochdale, and was appointed ophthalmic surgeon to the Rochdale Infirmary. The duties of that office he discharged during a period of six years.

Ten years ago he was appointed lecturer on physiology at Newcastle-upon-Tyne College of Medicine, and when, four years afterwards, his colleague, Professor Bainbridge, left the North for London, Menzies was appointed his successor. It was a judicious choice on the part of the University of Durham. Menzies loved and lived for the subject which he taught. Nowhere was he seen to greater advantage than in the laboratories. Always

willing to help his colleagues by rendering them all the practical assistance he could regarding any research work in which they were interested, he proved himself one of the kindest and most genial of colleagues. By the students he was recognized as a sound and inspiring teacher. With Professor F. A. Bainbridge he jointly produced *Essentials of Physiology*, a textbook which has passed through two or three editions; he also contributed many papers to the literature of physiology.

Professor Menzies left Newcastle for Oxford apparently in good health. So unexpected was his death that he had arranged to give several physiological demonstrations—one particularly with the assistance of Miss M. Atkinson, lecturer on physiology, and Dr. G. A. Clark, "On the passage of sulphate through the cells of the tubules of the kidney of the frog," during the Annual Meeting of the British Medical Association this week in Newcastle. Of Professor Menzies it can be truly said that in life he was held in high esteem, and that in death he is lamented. On Tuesday, July 12th, his body was laid to rest in St. Andrew's Cemetery, Newcastle-upon-Tyne, amid many expressions of deep regret from colleagues, students, and friends who had assembled to pay their tribute of respect to his memory. His wife and one daughter are left to mourn his death.

DR. EDWARD REYNOLDS RAY, who practised for many years in Dulwich and afterwards in town, died at the age of 79 on July 8th. He was in busy practice to within six months of his death, retaining a vigour of mind and body unusual at his age. He was educated at Guy's Hospital, qualifying M.R.C.S.Eng. in 1863, and subsequently becoming house-surgeon at Guy's. He left hospital to help in the practice of his father, whose health had begun to fail; otherwise he might have obtained a position on the staff of the hospital, since he was one of the best students of his time. He was greatly respected, trusted, and beloved by many, and held for a long time a leading position in Dulwich. Mr. Ray was a sportsman in the true sense, an expert fisherman, a good shot, a frequent attendant at Lord's, and a good whip. As a breeder of bloodhounds he took prizes with dogs which became famous, and for fifty years was a member of the Kennel Club. He became a special constable during the war, and led his section at the parade before the King. Just sixty years previously he marched in the review of the newly raised Volunteers, a record few could surpass. While taking night duty three times a week with charge of the ambulance, Dr. Ray attended daily at the Horton Military Hospital at Epsom. Here he won the esteem and affection of patients and staff alike, and here he worked throughout the epidemic of influenza. Dr. Ray, as a loyal son of Guy's, was present and was welcomed at all reunions. A sound practitioner, a warm-hearted sincere friend, a man of high ideals, and a thorough sportsman, he will be missed by a large circle of friends.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on July 9th the following medical degrees were conferred:

D.M.—J. M. H. Campbell.
M.CH.—G. Perkins.
B.M.—C. H. Terry, C. F. T. East, M. H. Mackeith, E. G. T. Liddell, W. H. Butcher.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on June 22nd. The annual report of the Physiological Laboratory Committee was presented. It gave a record of the work carried out in the laboratory, including a continuance of Professor A. Waller's work, with the assistance of Miss De Decker, on the emotive response and on the energy output associated with various forms of muscular work. It also contained lists of lectures given and of the publications issued.

Mr. G. Scott Williamson has been recognized as a teacher of pathology at the London (Royal Free Hospital) School of Medicine for Women.

Dr. T. D. Lister, C.B.E., has been appointed chairman of the Establishment and General Purposes Committee, and Mr. H. J. Waring, C.B.E., chairman of the Committee of Medical Members of the Senate.

Applications for the William Julius Mickle Fellowship of the value of at least £200 should reach the Principal Officer of the University, from whom further particulars can be obtained, by October 1st, 1921. It is awarded annually by the Senate to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

THE following have been elected to Burney Yeo Scholarships:

H. A. Robertson, M.A., Balliol College, Oxford; R. Cove-Smith, B.A., Gonville and Caius College, Cambridge; L. C. Whitworth, B.A., Downing College, Cambridge.

On the results of the June examinations the following awards have been made:

Senior Scholarship (£40), Tanner Prize (£10), Todd Prize (medal and £4 4s.), and Class Prize in Diseases of Children, R. C. Lightwood.
Class Prize in Orthopaedic Surgery, J. W. Hirst.
Class Prizes: Medicine, H. Moos; Forensic Medicine, N. W. Hubble; Hygiene, N. W. Hubble; Psychological Medicine, E. Murgatroyd.

UNIVERSITY OF EDINBURGH.

AT a graduation ceremonial held on July 15th the following degrees were conferred:

M.D.—G. A. Borthwick, T. L. Clark, †T. M. Davie (*in absentid*), A. V. Dill, ‡F. P. Fouché, *J. G. Greenfield, †R. L. Impey, J. P. P. Inglis, N. S. R. Lorraine, ‡H. M. Moir, B. P. B. Naidu, †R. H. H. Newton, P. J. Olivier, A. C. Renwick (*in absentid*), W. G. Richards, ‡W. Stobie (*in absentid*), ‡J. J. Thomson, ‡G. G. Wray.

* Awarded gold medal for thesis. † Highly commended. ‡ Commended.

PH.D.—R. K. S. Lim.
M.S.—D. Holmes.
M.B., Ch.B.—J. B. Aitken, G. J. Alexander, S. E. Ammon, T. F. Andrew (*in absentid*), Flora T. F. Angler, G. R. A. Armstrong, C. W. Badger, F. E. L. Beck, Rosa M. Bickerton, J. M. Black, J. M. Bosman, W. H. S. Boyd, Maeve C. Brereton, A. S. Burns, D. I. Cameron, J. Campbell, E. E. Candlish, E. A. Carmichael, Edith K. Chandler, J. H. Clarke, Jessie M'C. Craig, N. S. Craig, E. J. Crarer, Grace Cumming, E. D. Dingle, W. Douglas, A. Dower, S. J. Eapen, G. D. English, H. D. Epstein, Isobel M. Finlayson, E. M. Fraser, J. S. Fulton, Katharine M'L. Gifford, Elspeth L. Gilmour, Mary H. M. Gordon, O. Gray, Helen Gregory, Adele Haggart, A. A. Hamilton, Mary L. Hemingway, H. Hodgson, N. R. H. Holmes, Helen R. T. Hood, R. Howarth, J. W. A. Hunter, J. F. van Iddekinge, F. T. Ingram, V. W. Jack, E. S. Jackson, J. D. Johnston, P. R. Kemp, F. Krone, J. R. Larson, Laura M. Ligertwood, J. I. M'Caa, A. G. M'Clellan, Eliza W. M'Crae, A. Macdonald, Agnes B. MacGregor, R. G. M'Intyre, A. G. Mackay, D. E. Malone, Dorothea J. Mann, Margaret B. Martin, Nancy Martland, A. D. Maxwell, Isabella M. Mears, P. S. Meiring, C. E. Meryon, Mary Middlemass, Catherine A. J. Mitchell, Ruth M. Monro, D. M. Morison, Helen S. E. Murray, Jean Murray, P. N. Nag, C. S. Nimmo, Marjorie Norris, O. A. Omololu, C. G. Payton, C. S. G. Pillai, Janetta J. Powrie, Mary E. Price, Margaret M. Proudfoot, Margaret T. Rutherford, Marjorie E. F. Sanders, C. E. Scott, Hilda D. Scott, J. Sharp, L. Siff, G. J. Smit, M. T. Smith, H. W. J. Steen, C. Stewart, J. D. Stewart, Jenny R. Tait, R. J. O. Taylor, E. K. R. Thomas, H. B. Thomson, Sophia M. R. Thomson, P. H. J. Turton, J. Veitch, J. H. Verwey, T. J. M. Walker, D. C. Wilson, E. A. Wilson, Isabel G. H. Wilson, Hassan Zaifol (*in absentid*).
D.P.H.—H. Alexander, A. F. Campbell, Majorie H. King (*in absentid*), Annie L. MacDonald, Jane C. MacDonald, Annie S. MacLeod, H. J. Parish, A. Priestman, Annie M. Roxburgh, G. M. S. Smith, Mabel Thomson.

The following Fellowships, scholarships, prizes, etc., were also awarded:

Cameron Prize in Practical Therapeutics: J. J. B. V. Bordet, Director of the Pasteur Institute, Brussels, for important contributions to bacteriology, bio-chemistry, and chemo-therapeutics. Goodsir Memorial Fellowship: R. K. S. Lim, Ph.D., M.B., Ch.B. Straits Settlements Gold Medal: F. H. Stewart, M.D. (Acting Lieut.-Colonel I.M.S.). Gunning Victoria Jubilee Prize in Medicine: R. L. Impey, M.D. Gunning Victoria Jubilee Prize in Anatomy: C. W. Stump, M.B., Ch.B. Ettles Scholarship and Leslie Gold Medal: A. L. M'Gregor, M.B., Ch.B. Allan Fellowship in Clinical Medicine and Clinical Surgery: J. I. M'Caa, M.B., B.Ch. Murchison Memorial Scholarship in Clinical Medicine: J. M'C. Craig, M.B., B.Ch. M'Cosh Graduates and Medical Bursaries: E. A. Wilson, M.B., Ch.B. Beaney Prize in Anatomy and Surgery: L. M'Gregor, M.B., Ch.B. Mouat Scholarship in the Practice of Physic: R. G. M'Intyre, M.B., Ch.B. Conan Doyle Prize: A. L. M'Gregor, M.B., Ch.B. Annandale Gold Medal in Clinical Surgery: E. A. Carmichael, M.B., Ch.B. Buchanan Scholarship in Gynaecology: G. J. Alexander, M.B., Ch.B. James Scott Scholarship in Midwifery: Isobel M. Finlayson, M.B., Ch.B. Scottish Association for Medical Education of Women Prize: Isobel M. Finlayson, M.B., Ch.B. Dorothy Gilfillan Memorial Prize: Jessie M'C. Craig, M.B., Ch.B. Wellcome Medals in the History of Medicine: Gold Medal, J. M. Anderson; Silver Medal, T. Ferguson. Pattison Prize in Clinical Surgery: D. S. Middleton and A. J. Wilson (equal). Wightman Prize in Clinical Medicine: A. J. Wilson. Cunningham Memorial Medal and Prize in Anatomy: D. G. S. M'Lachlan. Whiteside Bruce Bursary: D. Mainland.

ST. ANDREWS UNIVERSITY.

AT the annual graduation ceremony on July 12th the honorary degree of LL.D. was conferred on Professor W. M. Bayliss, F.R.S., University Professor of Physiology in University College, London; and Professor David MacEwan, Emeritus Professor of Surgery, University College, Dundee.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony held on July 14th the honorary degree of LL.D. was conferred on Dr. W. M. Bayliss, F.R.S., Professor of General Physiology in the University of London, and the following medical degrees were conferred:

M.D.—*John Kirton, *G. F. Mitchell, A. J. Will.

M.B., CH.B.—*With First-class Honours:* †Annie Thain. *With Second-class Honours:* ‡Elsie J. Mann, ‡G. O. Thornton. *Ordinary Degree:* ‡C. A. Allan, A. B. Clark, R. Dawson, D. R. Dugan, Frances M. Duguid, L. I. Duncan, Margaret F. Fraser, Barbara M. Geddes, J. W. Gill, Ethel E. M. Gray, C. Joiner, Patricia H. Low or Cassie, ‡Max Mindé, F. H. Mollière, R. M. Savege, Elsie J. Scorgie, Jenny H. A. Simpson, Frances M. G. Sinclair, Elizabeth M Walker, Nora I. Wattie, Fred Wilson.

The John Murray Medal and Scholarship and the Lyon Prize, awarded to the most distinguished graduate in Medicine (M.B. and Ch.B.) of the year 1921, were both awarded to Annie Thain.

D.P.H.—Emily M. Badenoch, C. A. Harvey, F. D. R. Keyt, Winifred M. A. Kindness, Mathilda F. Menzies, D. I. Walker.

* Commendation for thesis.

† Completed Final Medical Professional Examination with much distinction.

‡ Completed Final Medical Professional Examination with distinction.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examinations indicated:

M.B., CH.B. (*Medical Jurisprudence and Public Health*).—A. W. Aird, J. R. B. Alexander, W. Bain, D. Baird, R. Black, F. A. Brown, R. O. Bruce, J. Campbell, H. Collingbourne, J. Cook, A. MacD. Douglas, I. Fine, L. P. Foyer, W. Fraser, A. Gardiner, W. Geyer, W. Gibson, G. F. Graham, *J. Grant, J. Hamilton, J. W. Hamilton, *R. C. Hamilton, W. D. Hood, M. Jackson, A. King, J. A. Lister, A. Logan, A. M. MacCallum, M. M'Lean, N. A. MacLean, A. M'Nulty, D. C. Marshall, D. V. Marshall, J. H. Miller, J. Nicholson, J. H. Ramage, W. Robinson, W. Simpson, J. Sommerville, A. V. Steen, T. Tannahill, H. G. B. Teggert, R. W. Todd, H. M. Walker, J. Wilkie, Martha L. Anderson, Mary E. Berry, Mary MacQ. Bonnyman, Margaret E. Campbell, Evelyn L. Caskey, Gladys M. Chapell, Margaret E. Colville, Agnes C. J. Davidson, Margaret B. Graham, Jessie M. C. Jamieson, Margaret S. L. M'Cash, Mary L. M'Kay, Mary R. Peden, Mary E. Proudlove, Elizabeth C. Rodger, Rosemary E. Scanlon, Annie Werner.

* Passed with distinction.

UNIVERSITY OF MANCHESTER.

THE following appointments have been made:—Lecturer in Systematic Surgery and Assistant to Professor of Systematic Surgery: Mr. W. H. Hey, M.B., Ch.B., F.R.C.S. Lecturer in Clinical Surgery and Assistant to Professor of Clinical Surgery: Mr. Charles Roberts, M.B., B.S., F.R.C.S. Lecturer in Pathology: Dr. Arnold Renshaw.

At a meeting of the Council of the University on July 13th the following appointments were made:—Lecturer in Bacteriology: Mr. J. H. Dible, M.B., Ch.B.Glasg. Lecturer in Morbid Anatomy and Histology: Mr. B. J. Ryrie, M.B., Ch.B.Edin. Lecturer in Psychology: Mr. R. H. Thouless, M.A. (Fellow of Corpus Christi College, Cambridge).

The following awards have been made:—Platt Physiological Scholarship: S. L. Mucklow. Dauntesey Medical Entrance Scholarships: F. H. Smirk (first), H. B. Kitson (second). Dumville Surgical Prize: H. L. Sheehan.

The following have been approved at the examination indicated:

FINAL M.B., CH.B.—S. Almond, *‖G. V. Ashcroft, Martha F. Barritt, E. C. Berg, Nancy E. Bleakley, ‡Muriel Coope, T. E. Coope, Eugenia R. A. Cooper, S. W. Drinkwater, Winifred M. Edgehill, T. M. Fisher, Kathleen M. Fullerton-Bailey, E. Gleaves, W. H. Gratrix, Ruth Hill, C. D. Hough, Violet M. Jewson, R. R. Lane, Eva G. le Messurier-Kneebone, C. Nelson, L. S. Potter, W. L. Powell, Harriet R. Reid, Annie Rothwell, †§H. L. Sheehan, *†‡§Margaret Single, H. Stafford, *S. Wand, S. Waterworth, R. Williamson. *Medicine:* Margaret Pownall, J. W. Smith, Nora M. Walker. *Surgery:* Nora M. Walker. *Obstetrics:* S. Adler, Marguerite Johnstone, Jessie Kilroe, W. L. Martland, H. Rosenthal, J. W. Smith. *Forensic Medicine:* R. S. van Aalten, P. D. Abbatt, J. H. Appleton, Mary W. Atkinson, Elsie C. Begg, J. B. Bennett, Doris H. Bentham, B. Broman, G. H. Buckley, **V. Chadwick, E. W. Clough, **H. M. Coope, N. S. Craig, Margaret Derbyshire, O. M. Duthie, Kathleen M. Eastwood, **Beatrice L. Ellison, H. E. Emmett, **J. H. Fletcher, E. S. Frischmann, W. Geraghty, R. Handley, Doris M. Hardman, A. Ingham, E. L. Jones, J. I. Kelly, Mary Kent, G. A. Lord, G. L. Meachim, Nora Mills, Winifred H. Mitchell, L. Morgenstern, A. C. Newman, Hilda Pratt, G. T. Robinson, A. Rosenstone, F. H. Scotson, Eleanor P. Smith, H. Southworth, G. B. Stenhouse, J. H. Struthers, Leo Unsworth, Emmeline Wade, C. B. V. Walker, Margaret J. Warburton, Margaret Wild, J. Worthington, J. Yates.

* Awarded Distinction in Medicine.
† Awarded Distinction in Surgery.
‡ Awarded Distinction in Obstetrics.
** Awarded Distinction in Forensic Medicine.
‖ Awarded First Class Honours.
§ Awarded Second Class Honours.

D.P.H.—A. Barrett, K. D. Bean, Mary Boullen, G. F. Bowman, J. W. Chadwick, W. Edge, D. Fisher, A. Furniss, E. Jones, W. H. Kauntze, Emily M. Peach, A. W. Ritchie, W. R. N. Smithard, R. J. Staley, W. Stott.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT a Quarterly Council, held on July 14th, the following four candidates were elected members of the Council: Holburt Jacob Waring, Frederic Francis Burghard, Charles Herbert Fagge, William Thelwall Thomas.

The Licence in Dental Surgery was granted to fifty-three candidates found qualified at the recent examination.

The Diploma in Public Health was granted to twenty-three candidates found qualified (conjointly with the College of Physicians).

The Diploma in Psychological Medicine was granted to six candidates found qualified (conjointly with the College of Physicians).

Donations.—The thanks of the Council were given to the President of the American Museum of Natural History, New York, for presenting a plaster cast of the Chapelle skull, models of Dr. J. H. McGregor's reconstruction of the Gibraltar skull, and brain cast. Thanks were accorded also to Lieut.-Colonel R. H. Elliot for a collection of forty-six specimens illustrating rare pathological conditions of the eye.

The proposal for an Examination in Ophthalmology was adopted. The proposal is to establish a special higher examination open to those who have passed the Fellowship.

Election of Officers of Council.—Sir Anthony Bowlby was re-elected President for the ensuing year. Sir Charles Ballance and Sir D'Arcy Power were elected Vice-Presidents.

The President reported that a letter had been received from the Minister of Health referring to Lord Cave's Committee on the voluntary hospitals, and inviting this college to nominate a member of "The Hospitals Commission" as recommended in Paragraph 17 of the Report, and that, on behalf of the college, he had nominated Sir George H. Makins to act in this capacity.

The Services.

DEATHS IN THE SERVICES.

DR. JOHN MONKHOUSE ROGERS-TILLSTONE died of heart failure on May 16th. He was the son of the late Benjamin Rogers Tillstone of Moulse, near Brighton, was educated at St. Bartholomew's Hospital, and took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1891. Before the war he was in practice at Maidstone, and for many years held a commission in the R.A.M.C.(T.F.), and succeeded to the command of the 1st Home Counties (Maidstone) Field Ambulance on April 1st, 1912; subsequently he was promoted to Colonel A.M.S.(T.F). He was also awarded the Territorial Decoration. During the war he was in command of the 81st Field Ambulance, B.E.F., and was mentioned in dispatches in the *London Gazette* of June 22nd, 1915.

Captain Wilfrid Hawkins, R.A.M.C., died at the Military Hospital, Belfast, on April 21st, aged 29. He was educated at Aberdeen, where he graduated M.B. and Ch.B. in 1914. After filling the post of resident medical officer at the Maternity Hospital, Aberdeen, he took a temporary commission as lieutenant in the R.A.M.C. on August 11th, 1914, in the first week of the war, and was promoted to captain after a year's service. He had served throughout the war, was mentioned in dispatches in the *London Gazette* of January 22nd, 1919, and received the 1914 star with the medals.

Medical News.

THE Right Hon. F. B. Mildmay, M.P., has been appointed a member of the Medical Research Council and its Treasurer, in succession to the Hon. Edward Wood, M.P., who resigned upon becoming Under Secretary of State for the Colonies.

ON July 15th the Duke of York unveiled at Guy's Hospital a war memorial to Guy's men who died in the war. The Prince of Wales, who is President of the hospital, had arranged to unveil the memorial, and his absence on account of indisposition was much regretted. The war memorial takes the form of new entrance gates on the eastern side of the hospital building, with the names of the fallen engraved in panels on the pillars of the gates, while on an arch above are the words, "Their name liveth for evermore." In addition to this memorial, three-fifths of the memorial fund is to be held in trust to provide such assistance as may be necessary to dependants of Guy's men who fell in the war, and to found a war memorial scholarship. The Duke was received at the hospital by the principal members of the medical and surgical staffs, and was elected a Governor of the Corporation. After the ceremony of unveiling the memorial the Duke formally opened the new massage building of the hospital.

THE North-East London Post-Graduate College will hold a special post-graduate course of two weeks' duration at the Prince of Wales's General Hospital, Tottenham, N.15, from Monday, September 26th, to Saturday, October 8th, inclusive. The course will include demonstrations of methods, cases, clinical lectures, etc. A syllabus will be issued in due course.

THE annual dinner of St. George's Hospital Medical School will be held on October 1st, at Oddenino's Restaurant, with Dr. H. A. Des Voeux in the chair. The usual notices will be sent out during August.

VIEW day will be held at the Great Northern Central Hospital, Holloway Road, N.7, on Wednesday, July 27th, at 3 p.m. The Chairman (the Marquess of Northampton) will receive visitors in the Board Room.

THE winter session of the Middlesex Hospital Medical School opens on October 4th, when the opening ceremony in the Scala Theatre at 3 p.m. will be presided over by the Earl of Athlone. Mr. Gordon Taylor will deliver an address, and Sir John Bland-Sutton will distribute the prizes.

SIX months' courses of lectures and practical instruction in Part I (physics and electro-technics) and in Part II (radiology and electrology) for the Diploma in Medical Radiology and Electrology of the University of Cambridge will be given in London beginning October 1st, 1921, and in Cambridge and London beginning January 12th, 1922, for examination at the end of the courses. Further particulars may be had from Dr. Stanley Melville, 9, Chandos Street, London, W., or Dr. Shillington Scales, Medical Schools, Cambridge.

MR. GERALD STANLEY, M.S.Lond., F.R.C.S.Eng., has received the doctorate of the Faculty of Medicine of Paris (M.D. Paris), with honours.

THE secretary of the University of Brussels has announced that in future there will be no more M.D. Brussels examinations held, nor will the diploma of the degree be granted by the University to foreign medical practitioners as formerly. In connexion with this announcement Dr. Arthur Haydon, 41, Buckland Crescent, N.W.3, secretary of the Brussels Medical Graduates' Association, is preparing a petition to the University of Brussels, and he asks graduates of Brussels University to write to him signifying their approval.

A POST-GRADUATE course on oto-rhino-laryngology will be held, under the direction of Professor Sébileau, at the clinic of the Hôpital Lariboisière, Paris, commencing on August 20th, and continuing thrice weekly. The course will comprise twenty lectures, and will be followed by a course of operative surgery; the fee is 150 francs. Further information can be had from the Secretary of the Faculty of Medicine of Paris.

DR. R. ROBLES, of Guatemala, has been made a chevalier of the Legion of Honour by the President of the French Republic, in recognition of his discovery that the disease known in Central America as "coast erysipelas," is transmitted by a filaria. The recent suggestion by Dr. V. M. Calderón that the mosquito may convey this disease has not yet been confirmed.

A BILL to create a Department of Health has been introduced in the Japanese House of Representatives, in order to bring the various health organizations of the empire under the control of one department.

ON June 1st the twenty-fifth anniversary of the Loomis Sanatorium, New York, was celebrated by the dedication and presentation to the institution of two new buildings, one to be called the Griswold Building, and the other the Standard Oil Company of New Jersey Building, in honour of their donors.

THE Philadelphia Medical Club held a dinner and reception on June 13th in honour of Professor Blair Bell of Liverpool and Dr. R. G. Rows of London.

AN Institute of Pathological Anatomy, named after Professor Hlava, who has supervised the building, has recently been inaugurated at the University of Prague. The institute is described as being the largest and best equipped of its kind in Europe.

THE Committee of the Fifth Cuban Medical Congress, which will be held in December next, has decided to invite American, French and Spanish physicians and surgeons to attend.

THE Associated Anaesthetists, a body formed by the combination of a number of societies, including the Canadian Society of Anaesthetists, is appealing for contributions to a fund to place a bronze bust of Dr. W. T. G. Morton in the American Hall of Fame. Subscriptions may be sent to the treasurer, Dr. F. H. McMechan, Lake Shore Road, Avon Lake, Ohio.

THE *Archives de l'Institut Pasteur de Tunis*, founded in 1906, are henceforward to be continued under the title of *Archives des Instituts Pasteur de l'Afrique du Nord*, and will be published alternately at Algiers and Tunis.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

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2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London*; telephone, 2630, Gerrard.

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*; telephone, 4361, Central).

LETTERS, NOTES, ETC.

ANOTHER CURE FOR CONSUMPTION.

A CORRESPONDENT in the Punjab sends us a letter recently received by him, which appears to show that there is in India a belief that consumption can be cured by the ingestion of monkey's flesh. The manner in which it acts is said to be this: that "no sooner the patient eats it than he vomits, and along with the vomited matter will come numberless germs that it is said daily consume the lungs. It is said that naturally those germs are as fond of monkey's flesh as ants, etc., of sugar."

SIR THOMAS BROWNE ON PROFESSIONAL SECRECY.

A CORRESPONDENT who once before found himself able to report to us the views entertained by Sir Thomas Browne on some incidents of these days has been listening to the debate in the Representative Meeting, and imagines himself to have heard the author of the *Religio Medici* discourse thus:

"In all disputes so much is there of passion, so much is there of nothing to the purpose. This is one reason why controversies are never determined. They so swell with unnecessary digression. Live by old ethics and the classical rules of honesty, nor think that all is good enough which the law would make good. Secrecy is no sectarian profession. The confessor is the confidant of the sinner; the law allows the confidences of the attorney and the commonweal requires the secret confession of the secret sin. Even debauchery deserves the pity of the puritan, and the redemption of corruption requires no discretionary disclosure.

"Think not that morality is ambulatory and an Eastern resolution is not less iniquitous when carried in a Northern hemisphere. Vicious opinions in one latitude become not virtuous in another. Vice and the devil put a fallacy on reasonable counsel, but let us admit no treaty with dishonour which no circumstances can make good, and therefore, though vicious times invert the opinions of things and set up new ethics against virtue, yet hold thou unto old morality."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28 and 29.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.